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Red Lights in Obstetrics Samuel A. Cosgrove, M.D., Jersey City, New Jersey	1
Post Episiotomy Fistula in Ano James F. Bishop, M.D., Davenport	6
Diagnostic and Therapeutic Considerations in Cervicobrachial Pain George Perret, M.D., Iowa City	7
Skin Sensitivity to Histoplasmin in Iowa Randall S. Derifield, M.D., Saginaw, Michigan, and Richard L. Cole, M.D., Grand Junction, Colorado	16
College of Medicine Clinicopathologic Conference	18

(Continued on page iv)

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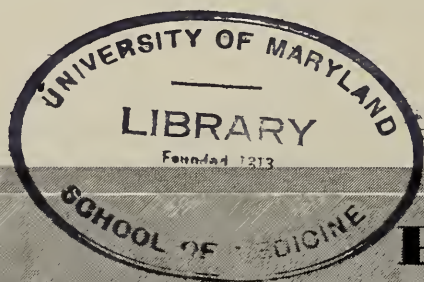
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No. 1

RED LIGHTS IN OBSTETRICS

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IDEALLY, CHILDBEARING is in no sense a disease, but the finest expression of woman's normal physiology. The vast majority of women will therefore undergo this experience, throughout the entire period of gestation as well as in parturition, without departing from physiologic functioning. The physician in caring for these patients drives, as it were, along a wide open highway devoid of traffic hazards.

But sick women will get pregnant, and pregnant women will get sick. When either pre-existing or intercurrent diseases obtrude themselves on the physiological course of pregnancy and parturition, it is as though a red light flashed before the physician, and he must drive with exceeding care with reference to the hazards which these red lights indicate.

Some of the diseases thus occurring concomitantly with pregnancy exist before the pregnancy and are quite independent of pregnancy for their pathogenesis. This independence is also true of acute illnesses, medical and surgical, occurring during the course of pregnancy. Another group of abnormalities has a direct pathogenetic relation to the pregnancy itself. It would, of course, be quite impossible to cover the whole gamut of the numerous red lights which flash along the highway of pregnancy and parturition within the time limits of this talk. But it will be constructive to consider some of the more significant ones.

Heart disease is very common in women of child-bearing age. Along the North Atlantic seaboard, 95 per cent of the etiologic background for such heart disease is rheumatism. In other parts of the country this is not so, but in all parts rheumatic heart disease constitutes by far the largest proportion of such pathology coming within the purview of the obstetrician. It is of rheumatic heart disease in particular then that I would wish to talk. Its significance in regard to pregnancy is wholly in propor-

tion to the degree of functional incapacity which a given heart pathology produces in the individual patient. The mere existence of demonstrable endocarditis may not be of particular significance in pregnancy. But the significance of impaired function, especially in such a degree as to evidence itself in the form of decompensation, has increased importance in relation to pregnancy.

The medical control of patients with heart disease therefore has to be even more careful when the victim is pregnant. The seriousness of the situation should be gauged entirely on the functional capacity of the heart. In the American Heart Association's Grade one, no special management is necessary except enjoining more rest in the daily life of the pregnant woman than she would ordinarily feel it necessary to have. This holds true through most of the pregnancy as long as there is no deterioration in the functional status of the patient. Even these relatively good risks should be seen by the physician at more frequent intervals throughout their pregnancies than would be the case in healthy individuals. Moreover, in the last trimester of pregnancy the physician's contact with them should be frequent and an even greater amount of bed rest enjoined.

If, however, there should be a history of decompensation at any time in the patient's lifetime prior to the pregnancy or prior to coming under observation in pregnancy, the woman should be graded as a serious case, falling within the Grade three or four classification. This is in spite of the fact that the woman may show in her symptomatic condition, at the time observed or in the actual physical examination and tests for cardiac function, no such serious degree of disfunction. In other words, they may be considered Grade three or four cases on the basis of history of decompensation alone. Both these patients and those who actually show physical evidence of greatly impaired function, so as to be classed properly at any time as Grade three or four, must be drastically managed. No matter how early in pregnancy they are seen, these Grade three and four patients, both actual and potential on the basis of their history as defined above, must be put at absolute continuous bed rest for the entire balance of their pregnancy. Where it is feasible this should

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be done in a hospital. Where hospitalization is not feasible, the same environmental conditions, nursing care and frequency of medical observation, should be approximated insofar as is possible in their environment.

Inevitably, most patients and their families will rebel against so strict a regime. But our experience has shown that by the application of this strict rule the failure rate can be reduced to 1/10 its incidence where a more lax management is in use, and the deaths reduced to 1/6. Economic factors, of course, enter pertinently into the picture here. Many victims of heart disease will needlessly lose their lives because society has as yet failed to make universally available the possibility of ideal management of all these patients.

Bed rest is the keystone of this whole scheme of management. It should be carried out with the close collaboration and advice of a cardiologist, and if possible, a particular cardiologist who has had special experience in the study of heart disease in relation to pregnancy. Details of treatment, such as the question of when, where and how to exhibit digitalis, I will not discuss. Our own practice is generally to reserve digitalis for actual states of decompensation. Oxygen is an important detail of therapy, perhaps the most important of medicinal resources. Sedatives are valid but must be exhibited with a certain degree of caution.

The termination of pregnancy is sometimes a pertinent question in these women. Inasmuch as we believe that even those in an embarrassed cardiac status may be safely carried through pregnancy, provided the medical care of the cardiac state is adequate, we do not recognize the propriety or necessity of early termination of the pregnancy. Similarly we feel that the greatest strain on an embarrassed heart probably exists at about the last half of the eighth month of pregnancy. Therefore termination of the pregnancy at this time is not judicious. These patients are better able to stand this termination either by spontaneous, natural or artificial means at full term, than they are at four to six weeks prior to the date of expectation. The premature termination of pregnancy by four to six weeks, heretofore much in vogue, has been completely abandoned in our scheme of management.

When term is reached and these cardiacs go spontaneously into labor, we recognize that there is some opportunity for judicious individualization. In general, however, we believe that the parturition should be allowed to evolve spontaneously and naturally, perhaps with the expedition of the second stage by low forceps extraction. But as a rule we do not use cesarean sections in these cases just because they have heart disease. I do not hesitate to use cesarean section if there is a concomitant valid obstetric indication for it.

One of the red lights which frequently causes a good deal of consternation is the concomitance of pregnancy with more or less active pulmonary tuberculosis. From time immemorial there has been

a strong feeling that such concomitance is unfortunate, if not disastrous. Hence, many conscientious men, among them in the past probably the majority of well qualified phthisiologists, have advised aborting patients with active, extensive or far advanced pulmonary tuberculosis. This extreme attitude has been greatly modified in recent years even among tuberculosis men. My own personal feeling for many years has been strongly conservative in reference to aborting the victims of this disease. I believe it is borne out by a considerable number of cases, that if a tuberculous subject can be handled properly during her pregnancy, as required by her tuberculous status, pregnancy and parturition is perfectly well borne, without essential detriment to her disease status and significant shortening of her life expectancy.

If an individual's tuberculosis is so controlled that her life expectancy is not seriously impaired, pregnancy and parturition will not negate this good life prognosis. If her disease is so far advanced that her life expectancy is insecure, interruption of the pregnancy will not improve the outlook. Control of her medical condition must be adequate and strict sanitarium conditions must be imposed during the whole time that she is carrying her baby. Modern methods of surgical treatment of tuberculous lesions, including thoracoplasty, may be carried out in the presence of a pregnancy. Thus protected, there is no excuse for the employment of abortion because of tuberculosis. This is true especially after the first trimester of pregnancy. It has been almost universal opinion even among those who do propose abortion that terminating the pregnancy after the first trimester is futile.

I do not deny that there are individual circumstances of disease, former childbearing and economic stress that make for peculiarly poignant and pitiable situations. I believe that economic and social conditions should not obtrude into the consideration of the medical situation by the physician who is just as much obligated to protect the life of the unborn fetus as he is to protect the mother. The physician who permits himself to go beyond the bounds of his primary responsibility will inevitably find himself accepting broader and broader reasons for abandoning his professional duty, until the concept thereof entirely breaks down and he is accepting justifications for terminating pregnancy that are far beyond valid employment of this horrendous and almost invariably unnecessary procedure.

Essential hypertension antedating pregnancy is another red light which flashes most ominously at the physician when he observes it in his pregnant patients. It is by no means confined to the older group of women, appearing even in youngsters. It is more often seen in our urban populations where late marriages and elderly primigravid women are encountered more frequently than in other sections of the country. This condition is no justification for denying the victims of it, the boon of motherhood. The physician should see the patient frequently, enjoin a regime of partial rest, be especially alert

to control as promptly as possible intercurrent acute infection and provide early determination of blood type and Rh factor status of the couple, looking to the prompt supply of available blood in the event of hemorrhagic emergency.

Special pains should be taken to avoid every evidence of superimposed pregnancy toxemia and to control such evidences of additional inroads on the patient's health as soon as they appear. The extensive work of Chesley in our own laboratory showed that these women who were already hypertensive before pregnancy occurred, do not suffer so far as their hypertensive status and their life expectancy is concerned, so long as they can be protected from the superimposition of true pregnancy toxemia.

One of the dangers is abruption of the placenta. Therefore, it is well to have these cases in the hospital for several weeks if possible before the date of expectation, so that if any such hemorrhagic emergency should develop, it can promptly be met. For this purpose it is essential to have suitable blood cross-matched and ready for employment at any time. In such a case, prompt cesarean section most frequently meets the indication.

It is possible, and by no means rare, for women in various stages of pregnancy to have acute surgical conditions of every sort. There are acute exacerbations of chronic conditions demanding more or less emergent surgical intervention. As a general rule, these surgical situations should be met by prompt, adequate surgical treatment just as though they occurred in non-pregnant individuals.

Without attempting to discuss the entire surgical field it is important to recognize the frequency with which acute intra-abdominal surgical conditions are met. Most frequent is acute appendicitis. Acute surgical lesions of other viscera are not rare. Among the most baffling is perhaps intestinal obstruction. Occasionally intra-abdominal hemorrhage occurs in pregnancy without any clear cut syndrome to account for it. Whatever the nature of the acute intra-abdominal surgical complications may be, the appropriate surgical attack should be made upon it promptly and with no reservations as to the method. The abdomen should be unhesitatingly and adequately explored to cope with the pathology discovered, but it is to be emphasized that such surgery should never be combined with obstetric surgery. Particularly, cesarean section is not necessary and should never be carried out as part of the surgical treatment of acute appendicitis or other acute lesions no matter what time they occur during pregnancy. A number of cases of acute appendicitis in our hands have been operated actually intrapartum but the natural evolution of the parturition to its fulfillment is not to be interfered with by surgical opening of the uterus from above.

In the last 20 years we have had 129 cases of acute appendicitis complicating all stages of pregnancy, some close to or actually during parturition. In no single case of this condition has cesarean section been combined with the other surgical procedure.

Most of the women have delivered healthy full time babies. In no case has parturition or other termination of pregnancy in close time-juxtaposition to the appendectomy interfered with the convalescence to be expected following the surgical pathology and operation. In general the postoperative convalescence has been remarkably smooth.

Only one mother has died. She was admitted on the third day after onset of acute appendicitis energetically treated by purgation prior to her admission and presenting severe generalized peritonitis at the time of her original operation. Therefore, on the basis of this rather extensive experience for one clinic, we feel strongly and desire to reiterate that surgical operation undertaken for the relief of definitive surgical lesions occurring during pregnancy at any time *should not be combined with obstetric surgery.*

A particularly brilliant three-clustered red light constitutes warning of the development of the toxemia of pregnancy. This condition, still as obscure in its etiology as ever, depends for the maximum salvation of maternal life and health and the salvage of the fetus on the earliest possible recognition. A significant trio of symptoms signaling its onset are:

1. *Hypertension.* This may show a gradual increase as pregnancy progresses or an entirely unexpected and sharp increase at any time toward the latter end of the pregnancy. There is no dietary or medicinal panacea for the control of hypertension signaling the onset of pregnancy toxemia. Bed rest is the most important and salutary resource at the command of the physician with the cautious exhibition of small amounts of various sedatives. Failure of these means of controlling hypertension over a short period, indicates the propriety of terminating pregnancy.

2. *Edema.* This is perhaps the second most important symptom of pregnancy toxemia. It should be carefully watched for in all stages of pregnancy and when occurring should be interpreted as toxemic. While there may be other causes for moderate lower limb edema in pregnant women, it is far safer to regard all manifestations of edema as probably indicating the development of toxemia. The earliest indication of such edema is frequently mere excessive or rapid weight gain. Gaining weight at too rapid a rate during pregnancy should be carefully controlled by restriction of diet and of the sodium ion in the food intake. Restriction of water per se is not necessary or salutary. Edema is not a mere backing up of water in the tissues but is a signal of electrolyte and protein imbalance which determines the localization of water in the tissues rather than permitting its excretion through the kidneys. Again, bed rest is a most valuable adjuvant to the management of edema. If, in late pregnancy, edema does not pass off promptly under bed rest and such dietary restriction as has been indicated, reduction in the total intake and in the sodium ion content of the food and adequate maintenance of the protein factor therein, again the termination of pregnancy becomes necessary and salutary.

3. *Proteinuria*. This is the third of the trilogy of symptoms significant as indicating toxemia. It does not always appear except as a late manifestation of a rather serious grade of toxemia. Its appearance should not be awaited to confirm the diagnosis of toxemia of pregnancy. When the toxemia of pregnancy is definitely diagnosed on the basis of one or all of the trilogy of symptoms discussed, and bed rest, dietary and electrolyte restrictions indicated and a careful regime of sedation, do not produce prompt amelioration or virtual disappearance of symptoms, the pregnancy, if beyond the 35th week, should be terminated. If the pregnancy is terminated before the mother has suffered too long from her sickness, the baby will have to overcome the handicap *only* of prematurity.

If the mother is maintained unnecessarily long in a sick condition in the futile hope of giving her a more mature baby, she is apt to lose her baby either before it is born or shortly afterwards by reason of the effect of her sickness on the baby. Therefore, it serves both the maternal and the fetal interest to terminate the pregnancy as indicated. Because of the fact that many of these toxemias occur in primigravidae not far enough along in pregnancy to respond successfully to medical induction, many of these cases will come to cesarean section as the best means of quickly terminating the pregnancy. Of course, trial of medical induction before resorting to surgery is nearly always sensible.

Physicians should be warned against attempting a too didactic division of pregnancy toxemia into so-called mild and severe cases. The borderline between mild toxemia and severe toxemia is tenuous and uncertain. In our experience more than one third of our cases of eclampsias have supervened in cases classified as mild by the ordinary criteria employed in making this distinction. It is probable that no toxemia failing to respond with reasonable promptness to a fully competent regime of control should be regarded as anything but severe. No hesitation should be had in terminating the pregnancy under those conditions.

Hemorrhage perhaps stands foremost among the causes of puerperal death all over the country. Yet, nearly all of these deaths are demonstrably preventable and unnecessary. Therefore, the red light which spells hemorrhage is one of the brightest and largest on the physician's road to successful practice in obstetrics. The assertion that nearly all these deaths are preventable is proven by the fact that in our own clinic in a period of five years during which time we have delivered more than 42,000 cases, there has been only one death from hemorrhage.

While it is true that every woman bleeds at some time during the natural evolution of her pregnancy, physicians and patients alike must be educated to recognize that bleeding, except that moderate amount incident to natural parturition, is always unnatural and dangerous, no matter in what degree it occurs or in what period of gestation. Bleed-

ing in the first two trimesters of pregnancy, usually signaling abortion, may occasionally be controlled, and the pregnancy continue to normal fruition. When abortion does occur the bleeding is usually self-limited, although occasionally it may be so great as to cause shock and the necessity for vigorous treatment to replace the blood loss. Bleeding of ectopic gestation is quite frequently of dangerous degree. Its control and the salvage of maternal life in connection with it depends upon accurate diagnosis and early surgical intervention, anticipated by and combined always, with blood replacement. It is particularly of the several sources of dangerous bleeding having to do with latter months of pregnancy and the puerperium that I would briefly speak. Eternal vigilance, routine early blood typing, and the provision in advance of sources of blood replacement, change the menace of those conditions to almost certain possibility of avoiding maternal mortality.

Placenta previa should be suspected and tentatively diagnosed when a woman in the last two or three months of gestation begins to bleed, especially if the bleeding be in significant amount, without warning and without special pain. Bed rest, preferably hospitalization, is at once necessary. Blood cross-matching should be immediately carried out and blood provided from a blood bank or other source for instant use.

Management will depend upon many factors, such as the parity of the woman, previous labor experience, the period of gestation in which bleeding occurs and the demonstrated location of the placenta. Such demonstration may frequently be aided by soft tissue x-ray examinations by a roentgenologist trained in this technic. However, too absolute dependence on such x-ray demonstration should not be accepted. The actual demonstration of the relation of the placenta to the cervical canal is, of course, only by direct palpation. However, the risk of producing increased hemorrhage in making such an examination is tremendous. Therefore, no such examination should be made except with the patient in the operating room, under anesthesia, with a copious supply of blood available for immediate use and with all preparations made for immediate laparotomy, before the vaginal examination is undertaken.

If central placenta previa is demonstrated, even in multiparae with other conditions favorable for vaginal delivery, cesarean section should be unhesitatingly selected as the safest manner of delivery. This should be done in the presence of profuse bleeding at the time of the vaginal examination without regard to the niceties of diagnosis of location of the placenta. Such operation should, of course, be carried out with the simultaneous rapid administration of enough blood to adequately meet the estimated or actual blood loss and maintain the patient's condition, recognizing that it is by all means best to prevent the patient going into shock if possible, rather than to depend upon catching up with shock already established.

There has been much discussion recently of the propriety of delay in the observation of these cases when the first episode of bleeding from known or assumed placenta previa occurs prior to the period of vigorous viability of the baby. Only in these circumstances and only in the fetal interest should such delay ordinarily be practiced. If such observation and dalliance in the fetal interest is carried out, it must only be in the hospital, with every condition provided for instant emergent treatment of further hemorrhagic episodes.

Abruptio of the placenta presents a classically different picture from that of placenta previa but unfortunately neither condition always conforms to the classical description of the text books. Abruptio of the placenta occasionally occurs with lightning-like rapidity, rapid shock and tremendous loss of blood. In these situations it is our practice to immediately empty the uterus, irrespective of whether or not the baby be dead, by cesarean section, instituted as soon as appropriate anti-shock management can put the patient into reasonably operable condition. This indication is modified if after coming under observation the patient be actually well advanced in labor, so that reasonably prompt eventuation of the labor by spontaneous or assisted vaginal delivery is probable. Each case should be individualized, and vaginal or abdominal delivery chosen according to conditions presented in each. I believe that our experience demonstrates that the majority of these severe or calamitous cases of abruptio are better handled by cesarean section than by other methods of delivery.

Not all cases of abruptio partake of this catastrophic picture. All degrees of abruptio are observed and carefully watched. The somewhat excessive bleeding occasionally seen during the first and second stage of labor may prove, on inspection of the placenta, to have been due to a small partial separation of the placenta during labor. So every grade of seriousness is seen, from this clinically non-significant one up to the catastrophic picture already discussed. In the intermediate grades it is frequently possible to recognize a progression in the severity of the symptoms adequate to make a definite diagnosis of abruptio, but long before the baby's circulation has been so compromised as to endanger its life.

In this range of cases we feel that cesarean section is the best procedure, not only to save the maternal organism from the extreme development of the most serious picture of abruptio such as we have described before but very definitely to salvage fetal life. Here again, there are cases where simple rupture of the membranes and the natural evolution of a rapidly progressing labor will indicate the propriety of vaginal delivery, but unless these favorable conditions for vaginal delivery present themselves, best results are obtained by unhesitating selection of cesarean delivery.

There are several phases of postpartum hemorrhage of which I desire to speak. Many cases of postpartum hemorrhage apparently dependent upon

atony of the uterus are due to mismanagement of the third stage of labor. There will not be entire agreement on the best way to manage the third stage of labor. I think there will be entire accord with the statement that the accoucheur himself must remain alert to the progress of affairs during the third stage of labor, concentrating his attention on it and leaving the necessary attention of the baby to others. He should maintain constant observation by bimanual control of the uterus from the instant the baby is born. In no case should the delivery of the placenta be too greatly hurried by injudicious mauling of the uterus. The expulsion of the placenta before the musculature of the uterus is properly stimulated to close the sinuses communicating with the placenta and before the normal blood-clotting mechanism has been organized to occlude those channels is a fault which may cause most troublesome bleeding from the endometrial surface.

It is impossible to say what the optimum length of the third stage is. If an oxytocic, according to our own practice, is given intravenously before the end of the second stage, that is, on the birth of the head or of the first shoulder of the fetus, the effect of this oxytocic is prompt and the placenta is frequently expressed almost immediately following the birth of the baby or within a period not exceeding five minutes thereafter. Even this prompt conclusion of the third stage should not be accomplished by excessive force applied to the uterus nor by any force exerted by cord traction.

Where oxytocics are not used prior to the end of the third stage itself, the third stage will ordinarily be somewhat longer than indicated above. If there is no bleeding, the spontaneous outcome of this stage may be delayed for a reasonable time, but the manual control and observation of the uterus should never be remitted. In the presence of bleeding or even in the absence of bleeding, after ten to thirty minutes if such spontaneous termination of the third stage does not take place, there should be no hesitation in manual exploration of the uterus and if necessary manual detachment and extraction of the placenta. This procedure we believe is fraught with much less danger than indeterminate duration of the third stage, with generally rather insignificant bleeding in any short period of time, but with a continuation of that small bleeding which makes for a significant summation of blood loss over a long period. Should bleeding be continued after the delivery of the placenta, the source of the bleeding must be carefully sought. Visual exploration of the cervix for lacerations possibly responsible for the bleeding should be carried out and such lacerations if discovered immediately repaired by suture. The endometrial cavity should be explored manually for the discovery and removal of adherent cotyledons and blood clot.

The interior should be carefully explored for rents, even incomplete rents involving only the mucosa and a part of the muscularis. If rents in the cervix are discovered and are not promptly con-

trolled by appropriate suture, or if other rents in the uterus are discovered, hysterectomy should be promptly resorted to. At all times the operator must be in charge of the situation, controlling the uterus between his hands, the lower one preferably within the vagina.

Packing of the uterus when it is ascertained beyond any reasonable doubt that there are no lacerations either of the cervix or of the corporeal segment of the uterus responsible for the bleeding, is futile and injurious. Even though no rents in the uterus are demonstrated, if the bleeding does not quickly respond to the use of powerful oxytocics given in adequate amount and by the bimanual control of the uterus by the operator already described, hysterectomy is occasionally a necessary and salutary answer to the problem. In these cases histologic examination of the myometrium will often demonstrate such a degree of degeneration thereof as to explain the failure of physiological control of the bleeding by its own inherent power.

The foregoing are not all the red lights which will warn the obstetrician of special conditions which he will have to meet in carrying his patient safely along the road to obstetric success. I have, however, endeavored to indicate some of the more important of them. I have not discussed them in any text-book fashion nor with reference to a copious bibliography. I have tried to tell you what appears to be best to us from a large experience, in regard to each of them, in a necessarily somewhat fragmentary way, much as I would informally discuss any one of them with any one of you in informal conversation. May I hope that this method of informal presentation will be at least in some degree helpful to you.

POST EPISIOTOMY FISTULA IN ANO

JAMES F. BISHOP, M.D.
DAVENPORT

SEVENTY YEARS AGO, in Europe, Herrman and De-fosses noted epithelial lined channels in the anal regions of human embryos. Subsequent investigators have verified their presence. These channels, or anal ducts, have been carefully studied by Kratzer^{1,2} and Dockerty and found to empty into the anal crypts. From this origin, they course outward through the anal sphincters, following an unpredictable pathway, to terminate blindly in the perianal tissues, sometimes as far away as the ischiorectal fossa or the supra-levator regions. In one third of the adult specimens studied by these investigators, there was periductal and/or intraductal inflammation. There are, then, epithelial lined avenues extending from the constantly infected anal canal into surrounding tissues. These ducts are, perhaps, comparable to the appendix in that both are potentially infected tubes which cause no difficulty so long as drainage is free and structure undisturbed. The evidence suggests that an anal duct is the pathway for a fistula in ano

when the structure's opening into its crypt becomes blocked, with resulting infection, abscess formation and subsequent drainage.

Any encroachment upon the duct's structural integrity may release infection outside its confines into the surrounding areas. Such encroachment may result when an episiotomy divides an infected anal duct, thereby creating a direct pathway between the infected anal canal and the vulnerable, freshly injured tissues about the incision. The fistula thus formed then behaves like any other fistula in ano, modified somewhat by the episiotomy wound. A portion of this incision, usually near its distal end, may fail to heal as in the first case below, or the wound may heal only to present later abscess formation as in the second case. As with other fistulas, there is likely to be intermittent surface healing with recurrent abscess formation until the lesion is removed.

The temptation to speculate, though dangerous, is sometimes well nigh overwhelming. Being thus overwhelmed, one is tempted to speculate that this lesion probably occurs more often than recognized, perhaps being interpreted as resulting from a suture inadvertently placed in the rectum during repair of an episiotomy. Obstetricians state that they have, on occasion, felt a suture in the rectum after completing their repair and have left it undisturbed, calling upon their favorite saints to forbid troublesome sequelae. The saints must be extraordinarily effective for rarely do sequelae occur. Some proctologists suture in and about the rectum without great concern for fistula formation. Even fistulas following low anastomoses in the rectum usually heal spontaneously. The tract formed by an absorbable suture soon closes by normal processes of repair. The epithelium lining the anal duct, however, precludes its closing in such a manner.

Treatment involves excision of the tract as with any fistula in ano. Often a partial repair may be done thereby decreasing appreciably the time required for healing. Such repair was attempted in the first of these cases only to meet with failure and prompt recurrence. At the second operation, the wound was left open. No repair was attempted in the second case and healing progressed satisfactorily. Such wounds fill from below with daily Sitz baths, cleansing and without packing.

Case 1. Mrs. L. B., 32, was delivered of her first child in January, 1947. A left medio-lateral episiotomy was made. The wound remained painful, and broke down about the fifth post-partum day, draining purulent material at its outer limit. The rest of the incision healed properly. There followed recurrent abscess formation with drainage of dark shreds interpreted as suture material. In August, 1947, episiotomy was reopened and no pathology found. The wound was resutured only to break down once more at its previous defection. The recurring abscess persisted and in November, 1947, the writer explored the lesion and demonstrated a fistula with its internal opening in a crypt in the left anterior segment of the anus. The tract

was incised, then excised completely, this requiring division of about one-half the thickness of the subcutaneous portion of the external sphincter. Partial repair was attempted and 40,000 units of penicillin in 20 cc. of saline was injected into the tissue about the wound. The fistula soon recurred. In February, 1948, it was operated upon once more, the tract excised, the edges trimmed and the wound left open. With daily cleansing and warm Sitz baths the wound healed promptly and the fistula has not recurred. At a subsequent delivery in November, 1949, episiotomy was carried out through the previous scar and healed without incident.

Case 2. Mrs. C. E., 25, was delivered of her first child on July 7, 1948, and a left mediolateral episiotomy was made. The wound apparently healed satisfactorily only to break down one month later at the outer limit with abscess formation. There was intermittent healing and drainage from the area until seen by the writer in November, 1948. At operation the fistulous tract, corresponding in location to that in the previous case, was excised completely and its edges trimmed. The wound was left open without packing and treated by daily Sitz baths. Healing proceeded promptly and was complete in a little more than two weeks. There has been no recurrence of either fistula or pregnancy.

CONCLUSIONS

1. Anal ducts, coursing from the crypts into surrounding tissues for variable distances, are epithelial lined, potential pathways for infection from the contaminated anal canal.

2. Division of such a duct, as by episiotomy, may create a fistula in ano terminating in the episiotomy.

3. There is no apparent means of predicting the course of such a duct so that it might be avoided in the perineal incision.

4. It is suggested that a suture inadvertently placed in the rectum while repairing an episiotomy is far less likely to be a source of trouble than the mechanism herein described.

5. The treatment is that of any other fistula in ano.

6. Any subsequent episiotomy in the same patient may be safely applied to the previous scar since the fistulectomy has destroyed the offending duct.

Note: Since this article was submitted, another such case has been treated. This fistula branched in three directions in the perineum and had caused repeated abscesses since delivery ten months previously. In the presence of a five month pregnancy, operation was done with partial repair of branching tracts. Healing was prompt and successful and the pregnancy undisturbed.

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DIAGNOSTIC AND THERAPEUTIC CONSIDERATIONS IN CERVICO- BRACHIAL PAIN

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ONE OF THE chief aims of medicine and surgery is the treatment of pain. Although our knowledge of the physiology of pain is still imperfect, our understanding of the pathways for the conduction of painful impulses has greatly increased in the past 20 years, and at the present a number of surgical procedures based upon anatomical and physiological data are successfully employed for the relief of pain. Pain of the neck, shoulder and the upper extremity is a common occurrence and can be caused by a large number of lesions. Their diagnosis and treatment depend upon the accurate knowledge of the anatomy of these regions, the motor and sensory pathways involved and the structures surrounding them.

ANATOMY

Let us follow the sensory and motor fibers from their origin in the spinal cord through their course in mixed nerves to the various parts of the upper extremity, remembering that pressure or inflammation anywhere along the course of these fibers may produce pain (Figure 1).

The motor fibers arising in the anterior horn cells of the spinal cord leave the cord through the anterior roots, while the sensory fibers enter the cord through the posterior roots. Lesions of the spinal cord itself such as intramedullary tumors or cavities may compress these roots and produce pain. The roots cross the subarachnoid space to enter the intervertebral canal. Tumors or inflammatory processes involving the subarachnoid space, the arachnoid or the dura, and protrusions of neighboring structures, such as intervertebral discs, into the spinal canal may be the cause of pain. In the intervertebral canal and foramen where the sensory ganglion lies, compression of the nerve roots by vertebral injuries, inflammation, vascular anomalies or tumors will result in pain. The sensory and motor roots then unite and leave the intervertebral foramen as a mixed nerve. They receive fibers from the sympathetic system. They are in close connection with the intervertebral vessels and give off important posterior rami to the vertebra itself, the vertebral joints and the surrounding neck musculature and skin. Lesions involving these structures, the vertebrae, or the muscles will produce pain. The nerve passes between the medial and anterior scalene muscles where it may be compressed. Both the medial and the anterior scalene muscles insert, one behind the other, on the first rib. In the supraclavicular fossa, the nerve meets other nerves arising from su-

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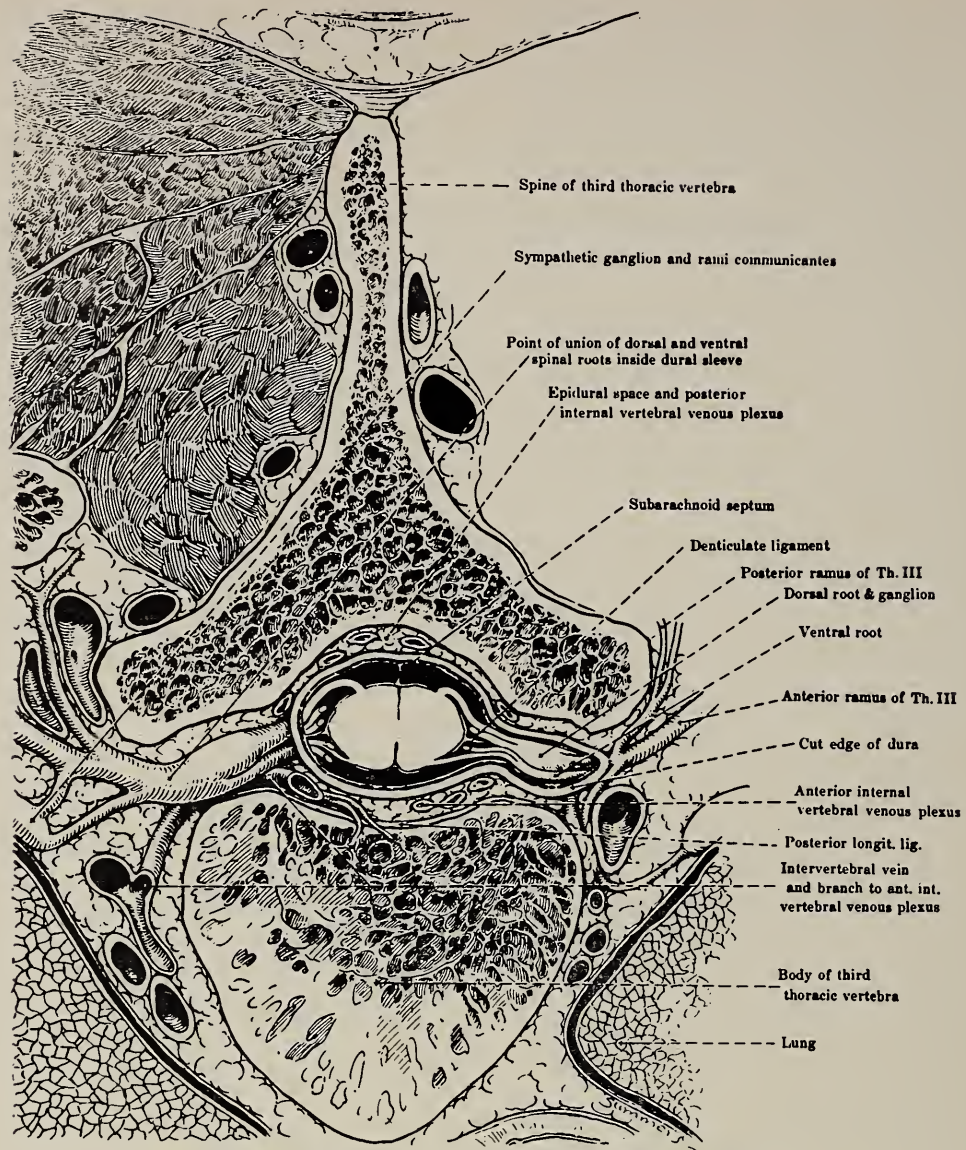


Fig. 1. Cross section of thoracic vertebra (after Mettler).

perior and inferior spinal levels; the sensory and motor fibers pair themselves to other fibers and form the brachial plexus (Figure 2). Anomalies of the surrounding structures, such as transverse processes, the pleura, muscles and lymph glands, may irritate any one of these nerves. The nerves become closely associated with the subclavian vessels, pass over the first rib and beneath the clavicle, over the subscapular muscle and beneath the pectoralis minor tendon. They may be easily compressed, kinked or stretched by bony, vascular, structural or positional anomalies, by tumors or injuries of the surrounding structures.

A number of nerve trunks arise from the brachial plexus and supply skin, muscles, joints and the vessels of the shoulder, the chest, the arm, the forearm, the neck, the hand and fingers. Inflammation and injuries involving the structures of the shoulder joint and the axilla, the humerus, the scapula, the bursae, the muscle tendons and the tendon sheaths, will produce painful stimulation. Figures 3, 4 and 5 show the segmental innervation of the muscles and the skin supplied by the

lower cervical and upper thoracic nerves which may mediate cervicobrachial pain. It must be remembered that motor and sensory fibers of the same spinal segment and anterior and posterior roots may supply a large variety of structures. For instance, the seventh cervical fibers supply the splenius, the latissimus dorsi, the longus colli, the anterior and medial scapuli, the pectoralis major and minor, the serratus anterior, the teres major, the coracobrachialis, the triceps, all the extensors and flexors of the hand and fingers, as well as the elbow joint and capsule, a strip of skin over the posterior aspect of the forearm and the thumb and index finger. Or, for instance, the fifth cervical nerve will supply motor and sensory fibers to the splenius, levator scapulae, rhomboid, longus colli, all the scapuli, the pectoralis major, the subclavius, the serratus anterior, the diaphragm, the supraspinatus, the teres minor, the deltoid, the infraspinatus, the subscapularis, the teres major, the biceps, the brachialis, the coracobrachialis, the supinator muscles, the shoulder joint, the subdeltoid bursa and the skin of the deltoid region. Thus,

a lesion anywhere along the course of one of these cervical nerves may produce changes such as atrophy, weakness, spasms, paresthesias, diminution or loss of pain, touch, heat or cold sensation and pain in a large number of muscles and joints, blood vessels and skin far apart one from the other. This explains the variety of symptoms described by patients who may have a ruptured intervertebral disc, cervical arthritis, a cervical rib, subdeltoid bursitis or a Pancoast tumor and difficulty in diagnosing and treating these conditions and in the cervicobrachial pain.

Lesions involving the nerve trunks emerging from the brachial plexus follow the motor and sensory distribution of peripheral nerves and can be diagnosed and treated without difficulty. We shall not deal with them in this presentation.

DIAGNOSIS AND TREATMENT

As we follow the course of the nerve fibers from their origin to their destination, from the spinal cord to the periphery, we shall deal first with neurologic lesions causing pain, then with orthopedic lesions, thoracic diseases, vascular diseases and finally with visceral disturbances.

1. *Lesions of the spinal cord.* Intramedullary spinal cord tumors and syringomyelic cavities are

not a frequent cause of cervicobrachial pain. When they produce pain it is usually radicular in type, distributed over an area involving several spinal cord segments. Muscle weakness, paralysis and atrophy are common, and symptoms and signs usually involve the rest of the body below the site of the spinal cord lesion. Spinal fluid studies usually reveal a subarachnoid block and changes in the chemical composition of the fluid. Myelographic studies reveal narrowing of the subarachnoid space with partial or complete block. X-ray studies of the cervical spine may show a widening of the cervical canal.

Removal of the tumor or drainage of the syringomyelic cavity will usually relieve the irritation of the nerve roots and stop the pain. If the nerve roots are involved in the tumor, a rhizotomy may become necessary.

2. *Lesions of the nerve roots.* Lesions involving nerve roots produce root pain characteristics with segmental pain distribution, segmental sensory diminution or loss and segmental muscle weakness and atrophy. The pain is intensified by the stretching of the nerve roots through movements of the neck, shoulder or arm and by coughing, sneezing and straining.

(1) Extramedullary spinal cord tumors often

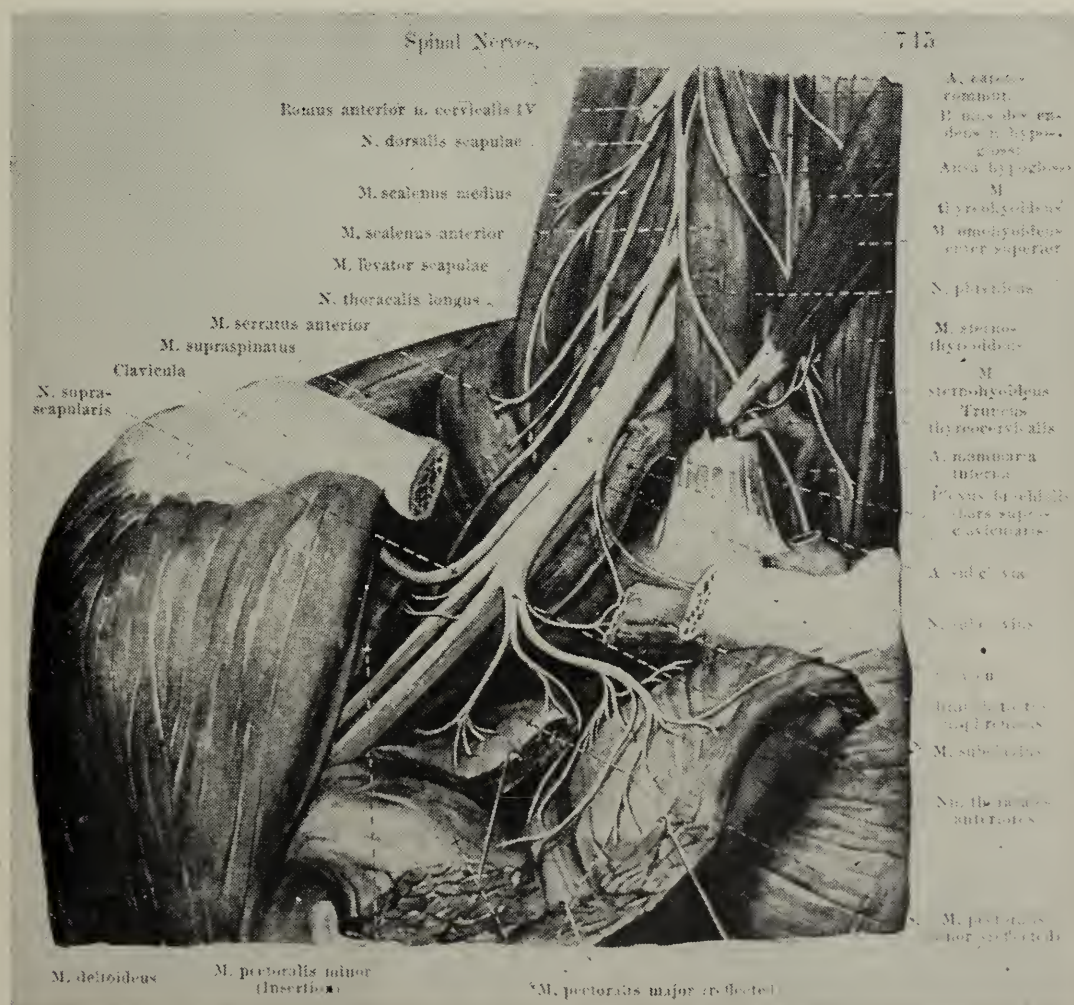


Fig. 2. The brachial plexus with surrounding structures (after Spalteholz).

produce pain involving one or more roots. They usually produce spinal cord signs and symptoms, changes in the spinal fluid composition, subarachnoid block and roentgenographic changes. At times, the pain will subside when sensory loss and muscle atrophy become more prominent. The most common extramedullary tumors are neurofibromas, meningiomas, lymphomas and metastatic lesions. Here again, the treatment consists of removal of the tumor and relief of tension and compression of the nerve root. Often, a rhizotomy is necessary which, of course, will produce perma-

in the neck, shoulder and upper extremity. Protruded cervical discs comprise only two per cent of all disc protrusions. The pain involves one segment and is unilateral. The motor disturbances may be difficult to detect but the sensory disturbances will involve the peripheral segmental distribution of the nerve root. The most frequent cervical roots involved are the sixth, seventh and the eighth. All three sites produce pain in the shoulder girdle, but involvement of the eighth cervical root will produce paresthesias and pain over the medial aspect of the arm, forearm, the third and fourth fingers and occasionally the fifth finger. Pain in the second and third fingers and the pectoral region suggests a seventh cervical root involvement. Pain in the thumb and the radial aspect of the arm and forearm suggests compression of the sixth cervical root. Slight hypesthesia in the fingers, slight atrophy, weakness and diminished reflex of the biceps may be present with a disc at the fifth cervical intervertebral space. Similar changes of the triceps are more typical of a disc between the sixth and seventh cervical vertebrae. Pain may be referred to the supraclavicular fossa, the shoulder blade, the pectoral region and the back of the shoulder. Other clinical signs are tenderness over the site of exit of the affected nerve, marked increase of pain on lateral flexion of the head and neck toward the affected side and with compression of the head. Relief of pain by neck traction, by tilting the head to the unaffected side and by abduction of the arm are characteristic. The spinal fluid studies are usually within normal limits. X-rays of the spine may show loss of the normal cervical curve, narrowing of the intervertebral space, narrowing of the intervertebral foramen and proliferative bony changes at the foramen and the intervertebral space. Myelographic studies show the typical deformity of the subarachnoid space at the site of the protrusion. No vascular components accompany this lesion. Spasms and tenderness of the scalenus anticus muscle are often present however.

The treatment consists of skeletal traction and bedrest for mild cases and if the pain persists and keeps the patient from doing his usual work or if muscular weakness, atrophy and sensory loss become more prominent, surgical treatment is indicated. Cervical discs are usually small, are often partially calcified, and only the protruding portion of the disc can be removed extradurally through hemilaminectomy exposure. Following this procedure, the patient's pain is usually relieved immediately; however, he may complain of paresthesias for a considerable period of time due to the previous compression of his nerve root.

(5) Degenerative and hypertrophic arthritis of the cervical spine may produce local nerve irritation by narrowing of the intervertebral foramina. This disease is a common cause of cervicobrachial pain. It is usually bilateral and frequently involves several vertebrae. Osteophytes and thickened joint capsules protrude into the intervertebral

Segmentinnervati													
Zervikalsegmente								Thorak					
1	2	3	4	5	6	7	8	1	2	3	4	5	6
Lange tiefe													
Kurze tiefe Nackenm.		Splenius						Serrat. post. sup.					
		Trapezius				Latissim.							
		Levat. scap.											
		Rhomboid.											
Longus capitis				Longus colli									
				Scaleni									
				Pectoral. maj.									
				Pectoral. min.									
				Subcl.									
				Serrat. ant.									
Diaphragma								Interkosta					

Fig. 3. Table showing segmental innervation of trunk muscles by lower cervical and upper thoracic nerves (after Bing).

nent sensory or motor disturbances. Relief of pain is usually complete following this procedure. Deep x-ray therapy may be indicated in lymphomas and metastases.

(2) Inflammation, such as meningitis, arachnoiditis, neuronitis and polyneuritis (Guillain-Barré syndrome) usually involves several roots. Segmental sensory and motor signs may not be present, but spinal fluid changes are always found and the diagnosis depends upon the increase of cells and protein of the spinal fluid. These lesions are usually bilateral.

(3) Trauma of the nerve roots resulting from fracture and dislocation of the cervical vertebrae usually causes severe but localized pain. The history, the common spinal cord signs and the x-ray findings help establish the diagnosis.

(4) Protrusion of intervertebral disc is a relatively uncommon but an important cause of pain

foramina, compress the vessels and the nerve roots and cause constant irritation. In chronic and progressive cases, objective sensory and motor disturbances may be seen. Usually this type of pain is not relieved by traction. X-rays of the spine are diagnostic. In localized cases, surgical decompression of the nerve roots within the intervertebral canal is of value. However, the common treatment for extensive lesions is primarily conservative.

3. *Lesions involving the brachial plexus.* The erect posture of Homo Sapiens is probably the main cause of cervicobrachial pain. It keeps the brachial plexus on stretch and the weight of hanging shoulders and upper extremities pulls the plexus taut over the first rib, beneath the clavicle and across muscles and tendons fixed to these bones. The most common cause of pain may thus be

attributed to postural anomalies which are known today as costoclavicular syndrome, subcoracoid pectoralis minor syndrome, scalenus anticus syndrome and first thoracic rib syndrome. A large variety of associated minor structural anomalies may be found. The brachial plexus may be subjected to traction or compression along its course by the following anomalies:

(1) An abnormally long seventh cervical transverse process may be palpable and is usually visible in cervical x-rays. It is often misdiagnosed as scalenus anticus syndrome and simple removal of the tip of the enlarged process may relieve the patient's symptoms.

(2) Cervical rib. This supernumerary rib arises most commonly from the seventh cervical vertebra and occurs bilaterally in 80 per cent of cases.

Segmentinnervation der Armmuskeln						
	Zervikalsegmente					Thorakalsegm.
	4	5	6	7	8	1
Schulter	Supraspinat.					
	Teres minor.					
	Deltoides					
	Infraspinatus					
	Subscapularis					
Oberarm	Teres major					
	Biceps					
	Brachialis					
	Coracobrachialis					
	Triceps brach.					
Vorderarm	Anconaeus					
	Supinator long.					
	Supinator brevis					
	Extensor carpi radial.					
	Pronator teres					
	Flexor carpi radial.					
	Flexor poll. longus					
	Abductor poll. longus					
	Extensor poll. brev.					
	Extens. poll. longus					
	Extens. digit. comm.					
	Extens. indicis prop.					
	Extens. carpi uln.					
	Extens. digit. V prop.					
Hand	Flex. digitor. sublimis					
	Flex. digitor. profund.					
	Pronator quadrat.					
	Flexor carpi ulnaris					
	Palmaris long.					
	Abductor pollic. brev.					
	Flexor pollic. brev.					
	Opponens poll.					
	Flexor digit. V					
	Opponens dig. V					
	Adduct. pollicis					
	Palmaris brev.					
	Abductor dig. V					
	Lumbricales					
	Interossei					

Fig. 4. Table showing segmental innervation of the muscles of the upper extremity (after Bing).

This rib may be floating or it may articulate with the first rib. It extends laterally from the seventh cervical vertebra, turns forward and downward between the scalenus anticus and medius muscles but rarely reaches the costal cartilage of

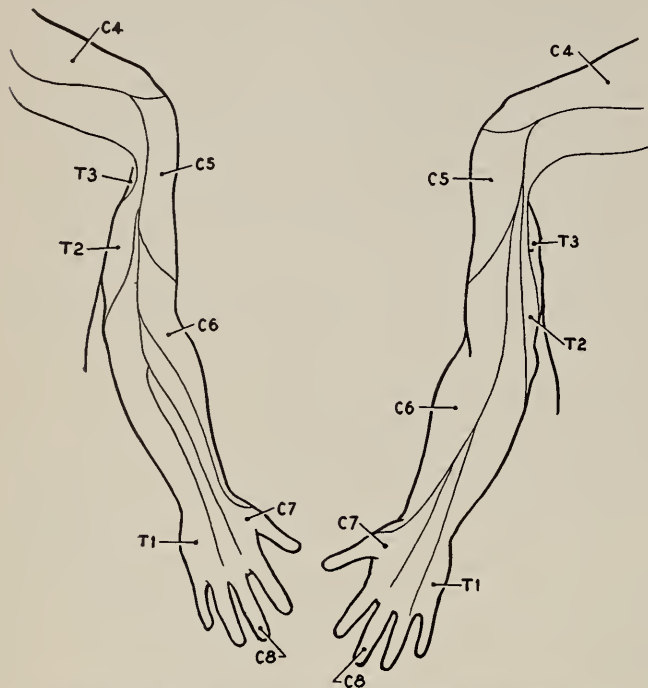


Fig. 5. Segmental skin innervation of the upper extremity.

the first rib (Figure 6). The brachial plexus lies over it, and the subclavian artery arches over it. It may be connected to the cervical transverse process and the first rib by fibrous bands and portions of the scalenus anticus muscle may insert into it. This rib often causes no symptoms. At times it compresses the inferior trunk of the brachial plexus and produces pain and paresthesias in the shoulder, the deltoid region, along the ulnar aspect of the forearm and hand and in the fourth and fifth fingers. The pain is usually worse at night and is aggravated by movements of the arm and especially by depression of the shoulder. It occurs most commonly in women, often following window washing, sweeping the floor with a broom or hanging up drapes. The symptoms are alleviated by elevation of the shoulder and flexion of the neck toward the affected side. Vascular disturbances are not common. They may be the result of compression of the subclavian artery and present an arterial bruit, a systolic pressure 10 to 15 mm. Hg. lower on the affected side and easy obliteration of the radial pulse. Thrombosis of the subclavian vessels and gangrene of the fingertips have been described. Other symptoms may be numbness, coldness and discoloration of the hand and fourth and fifth fingers. The rib can be palpated easily in the supraclavicular region and can be identified in roentgenograms. In 1948, Telford and Mottershead studied 122 cases of cervicobrachial pain and found it to be caused by cervical ribs in 87 cases. They also report thrombosis

and aneurysm of the subclavian artery and hyperhydrosis of the hand in 17 of the cases.

Complete surgical removal of the pain-causing cervical rib with section of the anterior scalene muscle and of other fibrous structures accompanying the rib is the treatment of choice. The main consideration in treating such a condition is relief of brachial plexus pressure, displacement and stretch. At times, simple section of the anterior scalene muscle may be the only procedure necessary. However, in our experience, cervical ribs so frequently give origin to tendinous bands that we prefer to remove the entire rib.

(3) Scalenus anticus syndrome. Spasms and hypertrophy of the anterior scalenus muscle have been accused of causing cervicobrachial pain, and section of this muscle has resulted in permanent or temporary relief of pain. This syndrome was commonly found and diagnosed 10 to 20 years ago and is still often mentioned today. Today, most authors believe the spasms of the scalenus anticus muscle are secondary to other conditions irritating the nerve fibers supplying the muscle, conditions such as ruptured cervical disc, hypertrophic cervical arthritis and rheumatoid cervical spondylitis. The



Fig. 6. Normal pattern of insertion of the scalenus anterior and the scalenus medius muscles (after Telford and Mottershead).

symptoms and the distribution of pain is the same as in the symptomatic cervical rib. It is true that occasionally insertion anomalies of the muscle are present, and they may oftentimes compress the subclavian vessels and the inferior trunk of the brachial plexus (Figure 6).

The pain is intensified by pressure on the shoulders and relieved by elevating the shoulders. Infiltration of the muscle with novocaine may also relieve pain. Often, the pain is aggravated and the radial pulse obliterated by extension and rotation of the neck to the side of the lesion associated with deep inspiration (Adson's test), by depressing the shoulders or carrying objects in the extended arm. Naffziger and Grant reported in 1938 the frequent occurrence of abnormally long seventh cervical transverse processes in these cases, and they recommended trapezius strengthening exercises and section of the scalenus anticus muscle in persistent cases of pain.

Thickened fascia posterior and lateral to the anterior scalenus muscle has also been accused of compressing the subclavian artery and producing thrombosis in the vessel together with brachial pain and vascular disturbances. The various anomalies involving the scalenus anticus and medius and their insertions in the first rib, or the occurrence of a scalenus minimus, may produce compression of the neurovascular bundle passing between the two muscle insertions, and symptoms may develop with drooping of the shoulders which increases the tension upon the nerves and narrows the space between the scaleni muscles. The effective treatment is postural and physiotherapeutic. Strengthening of the muscles supporting the shoulder girdle is of primary importance. It is only in rare instances that spasms of the scalenus muscle alone can be made responsible for cervicobrachial pain. Therefore, surgical section of the scalenus muscle alone is often only a symptomatic and temporary measure; one should always look for and treat the cause of the scalenus anticus syndrome.

(4) The costoclavicular syndrome is caused by compression of the medial portion of the brachial plexus and the subclavian artery and vein between the clavicle and the normal first rib by downward and backward bracing of the shoulders and hyperextension of the neck. This posture elevates the first rib and consequently narrows the space between the clavicle and the rib (Figure 7). The greatest amount of compression is applied on the subclavian vessels and on the lower trunk of the plexus, producing vascular disturbances in the fingers and pain, paresthesias, and loss of sensation in the ulnar aspect of the forearm and hand and the fourth and fifth fingers especially. The pain is aggravated by hyperextending the neck and back, holding the shoulders backward and by protrusion of the chest; it is relieved by supporting the elbows and drawing the shoulders forward.

Falconer and Weddell found that asymmetry of the thoracic inlet, deformity of the clavicle, deformity of the first rib and an unusually high first rib may predispose to costoclavicular compression. Some of these changes have been described in the literature under the name of *first thoracic rib syndrome*.

Changes of posture usually relieve the pain in these patients. The treatment is conservative, con-

sisting of postural exercises and physiotherapy. Occasionally, some relief may be obtained by section of the anterior scalenus muscle which produces a slight drop in the level of the first rib.

(5) Trauma. Poorly healed fractures of the clavicle and the first rib, large calluses following clavicular fractures, scar tissue beneath the clavicle, traumatic arteriovenous fistula between the subclavian artery and vein and traumatic aneurysms of the subclavian artery may compress the neurovascular bundle between the clavicle and the rib and produce similar symptoms. The case history,

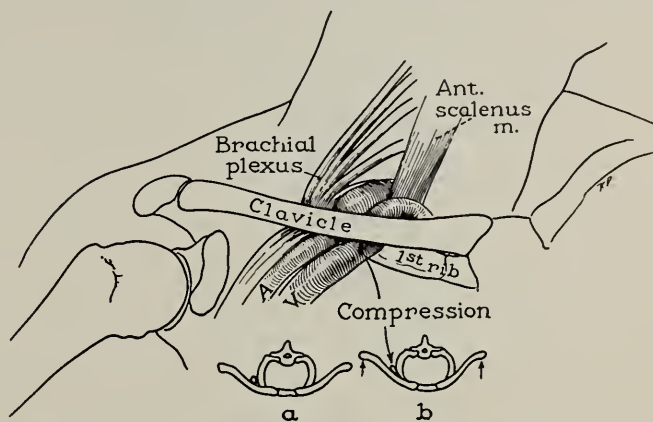


Fig. 7. Costoclavicular compression of the brachial plexus (after Eaton).

x-rays of the region and auscultation over the course of the subclavian vessels are usually diagnostic. Relief can be obtained by surgical treatment.

Injuries to the brachial plexus usually are accompanied by definite neurologic signs pointing to the injured portion of the plexus and should be treated accordingly. Following brachial plexus injuries, the pain is most commonly produced by compression of the components of the brachial plexus by surrounding scar tissue or by neuromas. Excision of the neuromas, repair of the plexus and neurolysis will usually relieve the pain. Pain produced by intraneural scar tissue may at times be relieved by intraneural injection of saline solution (intraneural neurolysis).

(6) Tumors arising from the lung, invading the pleura, compressing and invading the inferior portion of the brachial plexus and also compressing the subclavian vessels are known to be the cause of cervicobrachial pain. Pancoast's tumor is commonly accompanied by a Horner syndrome and may produce positive roentgenologic signs. Metastasis from breast carcinomas may also invade and compress the brachial plexus in the supraclavicular or the axillary regions and produce pain and vascular changes. The history and palpation of the mass are diagnostic. Neurofibromas of the brachial plexus are rare. They usually can be palpated.

(7) Subcoracoid pectoralis minor syndrome is characterized by pain and paresthesias in the entire hand and forearm with vascular changes in the fingers. It is caused by compression of the

medial and lateral cords of the brachial plexus and the axillary artery and vein by the pectoralis minor muscle close to its insertion into the coracoid process when the arm is hyperabducted. This condition is worse at night and is caused by sleeping with the arms elevated over the head. Hyperabduction of the arm produces obliteration of the radial

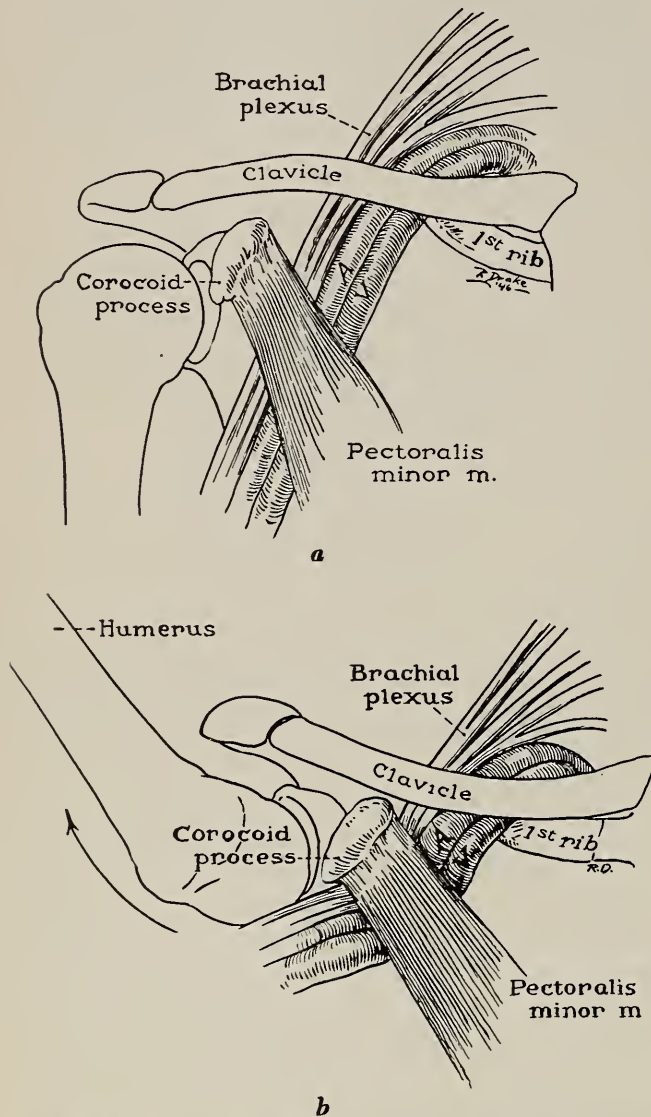


Fig. 8. Subcoracoid pectoralis minor compression of the brachial plexus (after Eaton).

pulse in these patients. The treatment is postural. Another type of pain, paresthesia and stiffness of the hand has been described under the name of nocturnal dysesthesia. It was observed in women with weak shoulder elevators and drooping shoulders.

4. *Lesions involving the nerve trunks.* The nerve trunks arising from the brachial plexus (median, ulnar, radial and musculocutaneous) may be stimulated by local inflammation, scar tissue, compressed by a callus or a fractured humerus or may be stretched and compressed by poor position on the operating table during anesthesia and thus produce symptoms of pain, paresthesias and motor and sensory changes in their peripheral distribution. Usually, only one nerve trunk is primarily

involved and, depending upon the area of skin and the level of the muscles involved, the level of the lesion can easily be diagnosed and treated. Various rare neuropathies should be mentioned. They are commonly associated with severe pain along the distribution of one or several of the peripheral nerves of the upper extremity and may result from alcoholism, avitaminosis, diabetes, heavy metal poisoning and faulty intramuscular or intravenous injections.

5. *Lesions of the shoulder girdle.* A number of local inflammatory or traumatic lesions involving the shoulder joint and adjacent structures may produce cervicobrachial pain. The shoulder joint is innervated by branches of the suprascapular, axillary and subscapular nerves, predominantly by fibers arising from the fifth and sixth cervical nerves. Therefore, pain originating in the shoulder joint may be referred anywhere along the sensory distribution of these nerves. These lesions are common.

(1) Subacromial or subdeltoid bursitis is the most frequent cause of shoulder pain and may involve one or several of the eight bursae around the shoulder joint. The pain is aggravated by abduction and rotation of the humerus and by pressure on the tip of the shoulder. Usually, calcifications can be seen in the x-rays in the region of the subdeltoid bursa or the supraspinatus tendon. This pain may be relieved by procaine injection in the bursa, application of heat, x-ray therapy and, in more severe cases, by surgical drainage or excision of the calcified areas.

(2) Periarthritis, commonly known as "frozen shoulder," is characterized by pain, stiffness and loss of motion in the shoulder. The patient is unable to put his hand behind his back or over the head or the face. Inflammation, trauma, immobilization of the joint or paresis of the upper extremity cause adhesions and fibrosis between the walls of the bursae, in the capsule and the tendon cuffs of the joint. Active physiotherapy and manipulation is the treatment of choice.

(3) Rupture of the supraspinatus tendon is accompanied by tenderness over the tip of the shoulder and is characterized by a loss of function of the supraspinatus muscle and inability to initiate abduction of the humerus.

(4) Muscle sprains and fibrosis may occur from undue use of the shoulder muscles. These common conditions are painful but are transitory and are easily treated conservatively with heat and massage.

6. *Vascular diseases.* Vascular diseases may produce pain in the upper extremity. They are commonly accompanied by swelling, coldness, discoloration, absence of pulse, ulceration and gangrene in the upper extremity and especially in the hand and the fingers. These symptoms are the result of sudden arterial occlusions or of chronic diseases such as arteriosclerosis obliterans, thromboangiitis obliterans, Raynaud's disease, acute thrombophlebitis and acute diffuse lymphangitis. They are rare

and usually do not produce shoulder or neck pain. Treatment is usually symptomatic but often sympathectomy is indicated to relieve the pain in the periphery.

7. *Visceral lesions.* I do not plan to discuss here the various theories of *referred pain*. According to Fulton, reference of pain is clearly a central nervous mechanism and depends upon the fact that both somatic and visceral afferent fibers carry impulses which affect a common pool of secondary neurons and that the principles of summation and inhibition are applicable. Some authors believe today that referred visceral pain may be transmitted through afferent sympathetic fibers which in turn may stimulate neighboring afferent somatic neurons and produce a sensation of pain in the peripheral dermatome. However, in many of the abdominal and thoracic organs, visceral pain can be transmitted through afferent fibers in the phrenic nerve, as demonstrated by the fact that even after complete thoracic sympathectomy, referred pain can be felt in the shoulders in case of diaphragmatic stimulation.

(1) Esophagus. Inflammation, neoplasms or spasms of the esophagus may produce neck and arm pain, probably through stimulation of the phrenic nerve.

(2) Diaphragm. Lesions involving secondarily the diaphragm, namely, pleurisy, pulmonary embolism, liver or gall bladder disturbances, may through phrenic nerve afferent fibers refer pain along the radial aspect of the arm and the deltoid region.

(3) Heart. Pain may be projected into the second thoracic dermatome along the internal aspect of the arm in cases of coronary sclerosis with angina pectoris and acute coronary occlusion. It is thought that in this case the pain impulse travels through the cardiac plexus, the middle and inferior cardiac nerves, to the upper thoracic sympathetic ganglia and from there to probably the second thoracic cord level where it makes connection with somatic afferent neurons from the second thoracic skin dermatomes. Paravertebral upper thoracic novocaine block has in many instances stopped the pain of angina pectoris; however, it is also known that local novocaine injection in the referred painful skin area has also stopped this referred pain. The problem of treatment of referred visceral pain is not settled at the present time.

SUMMARY

The most important causes of cervicobrachial pain have been discussed, their diagnosis and differential diagnostic points have been presented, and their treatment briefly outlined. A large number of these conditions are caused by irritation of the sensory roots of the cervical nerves and they all present root pain characteristics, such as pain referable to one dermatome or to muscles supplied by that one nerve root, pain which is aggravated by stretching or pulling on that nerve root, by

various postural means and which may be aggravated by coughing, sneezing, straining or laughing. Irritation of the sensory nerve fibers or motor nerve fibers will in many instances produce muscle spasms. Muscle spasms may be painful at times but one should remember that the muscle spasm is not the cause or the origin of the patient's disturbance but is simply a secondary reaction. Proximal brachial plexus lesions will also produce symptoms in a radicular area of distribution, while a distal brachial plexus lesion will present symptoms of a peripheral nerve distribution. The history and the mode of onset of cervicobrachial pain are very important. Often, strenuous exercises or movements produce a reaction of symptoms related to anomalous structures which had remained unknown and asymptomatic up to that time.

Thorough physical examination of the patient and radiographic studies are of great importance in evaluating painful disturbance of the neck and shoulder. In many of the conditions mentioned above, the x-ray findings are diagnostic, as for instance in cervical rib, cervical protruded disc, cervical or shoulder arthritis, asymmetry of the thoracic inlet, abnormality of the first rib, cervical tumors or dislocations and subdeltoid bursitis. In certain other conditions, roentgenograms do not reveal any abnormalities. It might be safe to state that, in general, the cervicobrachial pain without x-ray abnormalities is most commonly caused by postural defects which produce various types of compression of the neurovascular bundle above and below the clavicle. Abnormalities of the spinal fluid dynamics and composition will usually point to the seat of pathology within the spinal canal. Localized pain in the shoulder joint or pain produced by abduction and rotation of the humerus are suggestive of local joint disease.

In most instances, the diagnosis and treatment of cervicobrachial pain depends upon the cooperation of the neurologist, the orthopedic surgeon and the radiologist with the surgeon. In general, conservative management of the majority of cases should be tried before surgical treatment is instituted.

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SKIN SENSITIVITY TO HISTOPLASMIN IN IOWA

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ALTHOUGH HISTOPLASMOSIS is usually considered to be a rare disease, studies of skin sensitivity to histoplasmin reveal an unexpectedly high percentage of positive reactions. Equally striking is the wide variation of the percentage in different regions of the United States. The present study deals with our experience in the skin reaction to histoplasmin in the Des Moines Veterans Hospital.

REVIEW OF LITERATURE

Since 1906, when Darling¹ first observed the disease in Panama, approximately 100 cases of active histoplasmosis have been reported. The first cases in the continental United States were reported in 1926 by Riley and Watson.² Since that time an increasing number of reports of histoplasmosis have been published. Extensive reviews of this subject were recently published by Peterson and Christie³ and by Miller, Keddie, Johnstone and Bostick.⁴

Medical literature has reported the clinical manifestations of the disease as an irregular low grade fever with enlargement of the liver and spleen accompanied by anemia with leukopenia. Generalized glandular enlargement with pulmonary symptoms, such as chest pain and a productive cough, occurs at times. Cutaneous and mucomembranous lesions have been observed in over 50 per cent of the reported cases.⁴ A positive diagnosis cannot be made on clinical signs alone. It must be established by finding the causative organism, histoplasma capsulatum, in blood culture, bone marrow, or biopsy material. In tissues the organism occurs in the yeast-like form with refractile cell borders. Even the pathologist may at times have trouble establishing the correct diagnosis, because granulomatous lesions are not always examined routinely with the high power of the microscope. Most of the cases have been diagnosed at autopsy.

In medical literature it is usually stated that histoplasmosis must be differentiated from kala-azar, tuberculosis, sarcoidosis, malignant lymphomas and malaria. In this part of the world, where

kala-azar and malaria are not indigenous, it most often simulates tuberculosis or sarcoidosis.⁵ It has been observed co-existent with the malignant lymphomas in four patients.⁴ It seems probable that the entrance and multiplication of *Histoplasma Capsulata* were favored by the debilitating effect of the lymphoma.

PRIOR STUDIES OF SENSITIVITY TO HISTOPLASMIN

A number of observations on the geographic location of people sensitive to histoplasmin have recently been published. Palmer⁶ who studied this reaction in 10,580 student nurses from various areas of the United States, found that the percentage of positive reactors varied from five in Minneapolis to 60 per cent in Kansas City, Mo. His study showed 22 per cent positive reactions in 132 nurses who were originally from Iowa. The southeastern portion of Iowa revealed the highest prevalence of skin sensitivity. In contrast, Waring and Gregg,⁷ who studied the incidence of sensitivity among school children in Charleston, South Carolina, found positive reactions in less than two per cent. Seastrunk's⁸ investigations conducted in Columbia, South Carolina, found only seven per cent positive reactions in patients over 21 years of age.

Furcolow, High and Allen⁹ reported studies to determine the significance of age, race, sex and other factors to sensitivity to histoplasmin. In 1945 they tested over 17,000 people in Kansas City, Mo., with both histoplasmin and tuberculin. The study showed five per cent positive reactors to histoplasmin at the age of two. The percentage which reacted positively increased rapidly to 60 per cent at the age of 18. Thereafter the increase was less rapid, so that at the age of 40, 90 per cent of the people were sensitive to histoplasmin.

A number of recent investigations suggest a correlation between sensitivity to histoplasmin and pulmonary calcifications. Peterson and Christie³ observed in central Tennessee a number of patients with pulmonary calcifications who were negative to tuberculin but sensitive to histoplasmin. They were unable to account for this finding on the basis of the patient's loss of sensitivity to tuberculin. Dickie and Clark¹⁰ noted among students at the University of Wisconsin pulmonary calcification in 38.3 per cent of those reacting to histoplasmin and in 9.2 per cent reacting to tuberculin. They believe the assumption that tuberculosis has caused all pulmonary calcifications is no longer tenable.

Waring and Gregg,⁷ who surveyed a group of children in Charleston, South Carolina, found calcifications in the lungs associated with sensitivity to histoplasmin in less than one per cent, and it was discovered that these children had lived outside of South Carolina in areas where there is known to be a high incidence of sensitivity to histoplasmin. In children, Sontag and Allen¹¹ were unable to distinguish between the pulmonary calcification patterns of those sensitive to tuberculin or to histoplasmin.

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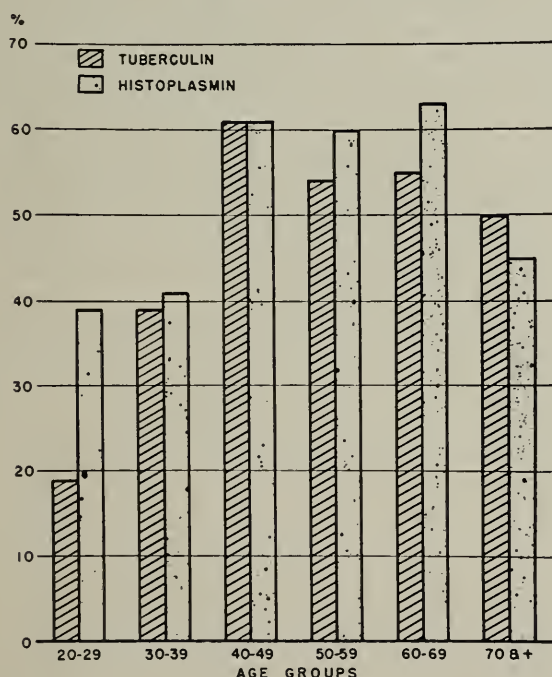
MATERIAL AND METHODS OF THE PRESENT STUDY

Histoplasmin, obtained from the United States Public Health Service, was diluted with saline 1 to 1000 prior to use. For the tuberculin test purified protein derivative was employed, diluted so that 0.1 cc. contained 0.0001 mg. Separate sets of syringes and needles were employed for histoplasmin and tuberculin and were not used interchangeably. One tenth of a cubic centimeter of each solution was given intradermally. The tests were considered positive if an area of redness and induration of 0.5 cm. or more in diameter was present 48 hours later. The patients used in this study were chosen at random from the medical wards with the exception that those with active tuberculosis were omitted.

OBSERVATIONAL DATA

A total of 502 patients were tested, of whom 479 were white males, 15 negro males, and eight white females. Because of the small number in the last two groups, they were not included in the following tabulations. The total number of examinations by age groups is as follows: 20 to 29 years, 79; 30 to 39 years, 75; 40 to 49 years, 51; 50 to 59 years, 194; 60 to 69 years, 60; and 70 years and older, 20.

SENSITIVITY TO TUBERCULIN AND HISTOPLASMIN BY AGE GROUPS



It was found that sensitivity to histoplasmin is present in 39 per cent of our youngest age groups, those from 20 to 29 years of age. The percentage gradually increased to reach a plateau of 61 per cent to 63 per cent in the fifth through the seventh decades. It then decreased to 45 per cent in patients 70 years of age and older. Sensitivity to tuberculin was present in 19 per cent of the patients in the 20 to 29 year group. The percentage increased rapidly to reach a maximum of 61 per cent in the fifth

decade. Thereafter it slowly decreased until only 50 per cent of patients of 70 and above reacted to tuberculin.

The influence of the geographic location of the patients' home on the incidence of sensitivity to histoplasmin and tuberculin was investigated. The patient's home was considered to be where he had lived for one year prior to hospitalization. In the southern half of the state 68 per cent of the patients were found to be sensitive to histoplasmin; whereas in the northern half 38 per cent reacted. A reaction to tuberculin was present in 43 per cent in southern Iowa and 48 per cent in northern Iowa. As all the subjects of this study were veterans, they had lived a part of their lives outside of Iowa.

DISCUSSION

Our findings of sensitivity to histoplasmin are in general accord with other studies which also show a variation in geographic distribution and an increasing incidence of sensitivity with age. The increased incidence with age changes to a decrease after 70 years of age. This decrease in both tuberculin and histoplasmin sensitivity observed in the oldest age group can probably be explained by a loss of sensitivity, rather than by a lower incidence of infections at some time in the past. The older people apparently do not have the inclination nor strength to circulate widely enough to expose themselves to reinfections. Just as sensitivity to tuberculin is thought to be maintained by repeated infections, reinfections may also be necessary in order to maintain a sensitivity to histoplasmin.

Because extensive selection as to sex and age exists in veteran patients, it is hazardous to attempt to draw too broad conclusions from data derived from this source.

The sensitivity to histoplasmin is presumed to result from a histoplasmosis infection. There is, however, no unequivocal proof that this test reflects an infection with this organism only. For with this disease, as with tuberculosis, few examples of the primary infection with the development of sensitivity have been observed. Zwerling and Palmer¹² report observations on three patients with minimal pulmonary lesions who showed no reaction to either histoplasmin or tuberculin. Gradually over a period of three months they developed a sensitivity to histoplasmin but not to tuberculin. The authors believed that these cases represent examples of benign histoplasmosis with the development of sensitivity. Knustadter, Whitcomb and Milzer¹³ observed a 12 year old Negro child with a pulmonary consolidation from whose sputum and blood *Histoplasma Capsulatum* was isolated. As the patient gradually recovered, the shadow in the lung appeared to be undergoing calcification. Sensitivity to histoplasmin was present during the entire period of observation. This case suggests the possibility that primary infection produces calcification in the lungs. Most of the case reports of histoplasmosis have come from those areas where a high

percentage of the population show sensitivity to histoplasmin.¹⁴ These observations add evidence to support the belief that histoplasmin sensitivity is produced by histoplasmosis.

Because of the high incidence in adults of sensitivity to histoplasmin in certain areas and the questionable specificity of the test, it may be of more value in pediatrics or in areas of low incidence than in the general practice of clinical medicine. A complement fixation test has been developed that may become useful in the diagnosis of histoplasmosis in the active stage.

The mode by which man becomes infected with *Histoplasma Capsulatum* remains obscure. Human cases have been so sporadic that it does not seem probable the disease spreads from person to person. The organism has not been found outside animal bodies. It has, however, been found occurring naturally in dogs.¹⁵ In addition, Emmons, Bell and Olson found histoplasmosis in one mouse and ten rats in a rural county in Virginia where four cases of human histoplasmosis had occurred.¹⁴ Such animals may serve as the natural reservoir from which man is infected.

SUMMARY

Evidence in recent medical literature suggests that a benign form of histoplasmosis exists and probably produces a number of the pulmonary calcifications previously attributed to tuberculosis.

The present study of skin reaction to histoplasmin reveals a high incidence of sensitivity in the male population of Iowa, especially in the southern half of the state. Sensitivity is found to be highest during the fifth, sixth and seventh decades.

Animals may serve as the natural reservoir of the disease from which man is infected.

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CLINICOPATHOLOGIC CONFERENCE

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SUMMARY OF CLINICAL RECORD

A 43 YEAR OLD white male sign painter entered the University Hospitals with a history of chronic alcoholism of more than 20 years duration. During the year prior to admission, he had avoided meals almost completely. A usual day as described by the patient included no breakfast, no lunch and a supper consisting of a small quantity of macaroni and cheese. He daily consumed an average of $\frac{4}{5}$ of a quart of whisky or $\frac{1}{2}$ gallon of wine. He had stopped working approximately one year prior to admission due to weakness and tremor; since then he had spent most of his time either in bed or in a chair. He had become progressively weaker and was able to walk but a short distance because of weakness and shortness of breath. For several months he had noted the appearance and disappearance of red spots on the face, neck, chest and arms. These were painless and did not ulcerate or scale. He could not recall having clay colored stools, but he had noted bright red blood in the stool on one occasion a few weeks prior to entrance. He had noted some tingling of the finger tips. Social, family and past histories were non-contributory.

Physical examination revealed the patient's skin to be faintly icteric, moist and oily; numerous vascular spiders were present on the face, neck, upper trunk and upper extremities. The tongue was magenta colored and the angles of the mouth were dry, scaly and moderately indurated. The lungs were clear to percussion and auscultation. The heart was normal in size. A loud mitral first sound was present and the aortic second sound was louder than the pulmonic second sound. The heart rate was 150 per minute and regular; the blood pressure was 140/70. The abdomen was rounded; the liver was enlarged seven to eight centimeters below the right costal margin and to the left beyond the midline. It was firm, regular, non-tender and smooth. The spleen was not palpable. A right inguinal hernia, easily reducible, was present. A gross intention tremor was noted with moderately hyperactive deep reflexes.

The patient's course in the hospital was characterized by progressive deterioration. On the second hospital day, while smoking in bed, he suddenly fell backward, cried out and developed a generalized clonic convulsion. His eyes rolled up-

ward, but he did not bite his tongue and there was no incontinence of the sphincters. He recovered in about five minutes, but remained disoriented for an additional 20 minutes. A lumbar puncture performed at that time revealed a clear fluid with an initial pressure of 145 mm. of water, a free rise and fall, and the Pandy's test was negative. The spinal fluid contained four lymphocytes per cubic mm. On the fourth hospital day he developed aural and visual hallucinations and a marked rest tremor. On the tenth day the jaundice had intensified, and he demonstrated a low grade fever of 100° to 101° F. daily. His appetite was poor and constant encouragement was necessary to maintain nutrition.

On the thirteenth day it was found that his stools were acholic, that his abdomen was distended, and the patient refused all food offered. Abdominal paracenteses were performed on the nineteenth, twentieth and twenty-second hospital days, each productive of between one and two liters of yellow-colored fluid with a low specific gravity. On the twenty-fourth day mercurial diuretics were started with some amelioration of the abdominal ascites. A repeat paracentesis on the twenty-fifth hospital day yielded 2,080 cc. of yellow fluid. At this time he had a severe diarrhea which had been present for two days characterized by eight to ten watery, grayish-colored stools each 24 hours. He refused all medication and tube feeding was started. The following day he developed severe epistaxis and nasal packs were necessary; the stool contained blood at this time. Two days later the stools became tarry and the patient vomited coffee-ground material. He was given two blood transfusions with no apparent clinical improvement. On the thirtieth day of hospitalization he appeared weak, semi-responsive and critically ill. There was a loud friction rub over the entire precordium, systolic in time, unrelated to respiration. A gallop rhythm was audible and the heart rate was 110 per minute. On the thirty-third day the patient was comatose and considerable mucus accumulated in the throat which required constant aspiration. His respiratory rate rose to 32 per minute and nasal oxygen was started. On the thirty-fourth day he expired.

LABORATORY DATA

Urine: specific gravity 1.025, pH 7, albumin 0, sugar 0, blood 0, bile 3+, urobilinogen 4+; urobilinogen gradually fell to 0 on the thirteenth day and remained 0 to a trace thereafter; bile 4+ until week before death, diminishing to 3+ and finally 2+.

Stool: trace of bile on admission and 0 to faint trace thereafter; contained blood on three occasions; urobilinogen 0 to trace throughout hospital stay.

Blood: hemoglobin 14 grams per 100 ml.; red blood cell count 3,860,000 per cu. mm.; white blood cells 7,350 per cu. mm.; peripheral blood smear normal; Wasserman reaction negative; blood urea nitrogen 9 mg. per 100 ml.; creatinine 1.0; total

plasma proteins 7.01 gm. per 100 ml.; albumin 3.55 gm. per 100 ml. and globulin 3.46 gm.; cephalin flocculation 24 hours 0, 48 hours 1+; thymol turbidity 11 units; zinc sulphate 10 units; alkaline phosphatase 3.2 units; blood cholesterol 118 mg. per cent with esters 29 mg. per cent; Van den Bergh 6.1 mg. per cent direct; prothrombin time 50.7 seconds with control 40.3 seconds; fasting blood sugar 120 mg. per cent. Second week of hos-

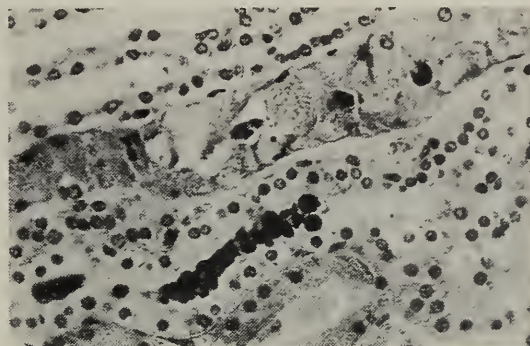


Figure 1. Cirrhosis With Toxic Hepatitis.

pitalization: Van den Bergh 1 minute, 11 mg. per cent; 30 minutes 17.8 mg. per cent; alkaline phosphatase 3.6; cephalin flocculation 24 hours 1+, 48 hours 2+; total plasma proteins 5.78 gm. per 100 ml.; albumin 2.68 gm. per 100 ml. and globulin 3.10 gm. per 100 ml.; zinc sulphate 7 units. Thirty-fourth hospital day: blood urea nitrogen 186 mg. per 100 ml.; creatinine 8.0 mg. per ml.; total plasma proteins 6.16 gm. per 100 ml.; albumin 2.84 and globulin 3.32; Van den Bergh 29.2 mg. per cent.

Abstracted by Robert E. Hodges, M.D.

NECROPSY FINDINGS

There was severe icterus of all tissues with several spider telangiectases in the skin. Four thousand ml. of dark-yellow, clear fluid was present in the peritoneal cavity. The heart was of normal size, but was covered with a fibrinous exudate. There was moderate pulmonary congestion and edema. Both the spleen and liver were enlarged. The latter was generally smooth. Microscopically the liver presented the picture of a portal type of cirrhosis with extensive fatty metamorphosis. Scarring, although present, was not excessive. No esophageal varices could be demonstrated, but a one cm. in diameter gastric ulcer was found on the lesser curvature. The kidneys were swollen and icteric. Microscopically the changes were those of bile nephrosis.

The primary cause of death was considered to be uremia secondary to bile nephrosis incident to portal cirrhosis.

NECROPSY DIAGNOSIS

Cirrhosis of liver, portal type.
Bile nephrosis.
Uremia.
Jaundice.
Ascites.

Congestion and edema of viscera.
Chronic gastric ulcer.

CLINICAL DISCUSSION

Dr. Murray Franklin (Medicine): Today we discuss a case, the diagnosis of which is not too difficult. It is a fairly typical case, except in three aspects. This man had three complications which do not occur commonly in cirrhosis.

First, I would like to call upon Mr. Robert Mandsanger and hear the student opinion of this case.

Mr. Robert Mandsanger (Student): This morning the students felt that the diagnosis was quite



Figure 2. Fatty Metamorphosis of Liver.

simple also, in that the majority voted for Laennec's cirrhosis; but a number felt there were a number of complications which were superimposed upon the cirrhosis. They felt that there were esophageal varices; about one quarter of the class felt that there was a fatty liver, superimposed; peptic ulcer was mentioned as another possibility, superimposed, and intrahepatic obstruction. It was fairly evident that obstruction occurred about the twelfth day, and the majority of the class felt that this was intrahepatic rather than extrahepatic. Other diagnoses that were considered were: biliary cirrhosis and carcinoma of the liver, both primary and metastatic, primary neoplasm, Pick's disease, polyserositis, amyloidosis and obstructive jaundice of extrahepatic origin.

For the cause of death, about one half of the class felt that it was uremia with renal failure, probably fitting into the syndrome of hepatorenal disease, and the other half of the class thought cardiac failure. A few thought it was rupture of the esophageal varices, two thought it was edema of the brain and two thought it was the syndrome known as cholemia.

Dr. Franklin: The three things that bother me in this case are complications which are not often seen and are often confusing. First, you must explain the convulsions. Second, you do not often see a severe degree of jaundice in cirrhosis. Third, uremia is not frequently seen in cirrhosis.

The first two paragraphs of the protocol describe the physical examination and the history which are characteristic of a man having alcoholic cirrhosis. For the past six months he had not eaten much and had consumed a lot of alcohol. When he was

admitted, he was slightly jaundiced, covered with spider nevi, had a large liver and ascites. I think one is justified in saying that he probably had alcoholic cirrhosis.

Convulsions are not frequently seen in cirrhosis. Of course, a patient may have cirrhosis and have some other brain disease such as epilepsy or tumor, but we had no reason to believe this man had any other disease. One can see convulsions rarely in what is known as hepatic coma. Hepatic coma is a symptom complex which occurs with a severe degree of liver failure and the patient becomes drowsy, more and more stuporous and gradually goes into a deep coma. I do not think this patient was in coma at this time. This type of a convulsion, coming on suddenly, its infrequency in hepatic coma and the fact that he had hallucinations which are infrequent in hepatic coma, are against the convulsions being due to hepatic coma in this case. I think this man had what is sometimes called a "rum fit." These patients are alcoholic and may or may not have cirrhosis. During these attacks the patient is sedated and restrained. He may have to be fed parenterally and, if cardiac failure or pneumonia do not become complications, the patient recovers. The fact that the patient recovered spontaneously without therapy is another point against the convulsions being due to hepatic coma.

On admission this patient was slightly jaundiced. You will notice that in the following few days he suddenly finally became so jaundiced that there is no stool or urinary urobilinogen, a 4+ bilirubin in the urine and his Van den Bergh was 30 mg. per 100 cc. The patient had intrahepatic obstruction. This occurs in about 15 per cent of the cases of cirrhosis. When a patient with a Laennec cirrhosis, alcoholic cirrhosis or fatty cirrhosis, becomes markedly jaundiced, something is superimposed on that cirrhosis. It is an acute hepatic necrosis or acute toxic hepatitis. We must remember that the ordinary case of Laennec cirrhosis is usually compensated as far as jaundice is concerned. A biopsy of the liver cells in such a case would appear normal. That is not the case of a patient who has developed severe jaundice. That patient has a superimposed acute necrosis upon the chronic cirrhosis. What is the cause of this acute hepatic necrosis in cirrhotics? Frequently a patient who goes on a "binge" and consumes a great deal of alcohol over a short period, will get severely jaundiced. Sometimes the cirrhotic patient develops an infection or a gastro-intestinal hemorrhage and suddenly becomes severely jaundiced. A look at the liver cells now will reveal degeneration; there are changes identical to those seen in ordinary toxic hepatitis. The function tests are now abnormal. Many times we have no known exciting etiologic factor. Perhaps it is an endogenous toxin.

Another exciting factor that may cause this and one which is sometimes seen on wards, is overdosage with barbiturates or morphine. The ordinary, normal liver when exposed to a stress or

strain such as anoxia due to barbiturates, over-dosage, hemorrhage or infection will not ordinarily become damaged. Normal livers have a tremendous reserve. However, a cirrhotic liver, which seemingly may be normal as far as the hepatic cells are concerned, when subjected to a stress or strain such as a severe hemorrhage or barbiturate intoxication, may easily develop severe damage. This occurs in about 20 per cent of the cirrhotic cases, and these patients become severely jaundiced. Frequently the jaundice deepens, cholemia begins and they die.

This patient developed intrahepatic obstruction. You can see that by the laboratory results. The blood bilirubin went up to high levels, the urine bilirubin became 4+, the stool and urinary urobilinogen 0. I think one can rule out an obstructive jaundice here easily from the urine findings alone. When this man came in, he had a 3+ bilirubin and a 4+ urobilinogen in the urine. I know of no condition outside of acute parenchymal damage which will give that finding. In obstructive jaundice, one finds 4+ bilirubin and no urobilinogen or a decreased amount; a hemolytic jaundice may give a 4+ urobilinogen, but there is no bilirubin in the urine. Now, if this patient had been in obstructive jaundice, he would have started out with a normal urobilinogen which would then have gone down to zero as the bilirubin rose. The patient did not start out with a normal urobilinogen, he started out with a 4+ urobilinogen which dropped to zero as he went into intrahepatic obstruction. I think one can rule out an extrahepatic obstruction on that point alone.

The uremia in this case needs explanation. I always have avoided a discussion of the hepatorenal syndrome because I do not know what is meant by the term. There are, however, some things we do know about the interrelation of the kidney and liver, and there are some conditions under which we know this interrelation may become so marked that the patient may die with a severe jaundice and uremia.

Originally the French workers way back in the late 1800's first noticed that there were some hepatorenal interrelations. They described an hepatorenal syndrome which was due to the fact that in cases of severe liver damage the toxins which ordinarily are taken care of by the liver must be taken care of by the kidney. These toxins may injure the kidney. However, they went further and claimed that, by the mere fact of having liver damage, specific toxins are formed by breakdown of liver tissue which affect the kidney and cause kidney pathology. No one, to my knowledge, has ever been able to show that such specific toxins exist. The existence of such a concept of an hepatorenal syndrome is not adhered to by most workers in the field today. There are conditions where jaundice and uremia appear simultaneously. There are many etiologic factors which damage both the liver and kidney at the same time so that severe hepatic and renal damage occur. Weil

disease is an example; the spirochete hits both the liver and the kidney and therefore are both damaged. Toxemia of pregnancy is another similar condition in which the liver and kidney are damaged concomitantly. Carbon tetrachloride is another example of a single etiologic agent affecting both liver and kidney. In other words we have a concomitant effect by a single etiologic agent. That is not the same as the French workers originally proposed as an hepatorenal syndrome. Many individuals use the term hepatorenal syndrome loosely to cover any situation in which there is jaundice and an azotemia.

Finally you see things, such as in this case, a

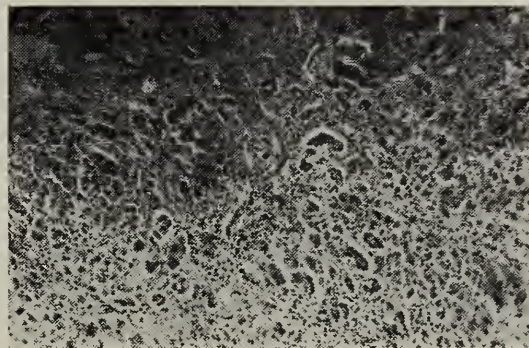


Figure 3. Bile Nephrosis.

patient who has a cirrhosis or an acute toxic hepatitis, where he will develop uremia. Several years ago I studied many cases of fulminating infectious hepatitis and fulminating toxic hepatitis. Uremia was never found in the infectious hepatitis cases. This man had a chronic cirrhosis, plus acute toxic hepatitis and necrosis of the kidney tubules, the uremia being due to the latter.

In ordinary cases of cirrhosis or hepatitis, sodium and water are retained and frequently there is a slight elevation of the blood urea nitrogen or non-protein nitrogen, never to a uremic level. Some people believe that there is an antidiuretic factor which is secreted by the pituitary, but which in liver damage is retained and the patient develops retention of fluid, retention of sodium and because of the oliguria they get a slight increase in the azotemia. Shorr believes there are certain humoral factors such as vaso-depressor and vaso-exciter substances secreted by the liver and kidney which play a role in shock and indirectly in liver and kidney diseases.

Again I want to repeat that the term hepatorenal, in its original sense, has no meaning and should be abandoned. I think the important thing is to realize a patient can develop uremia when he has this type of thing.

Incidentally you may see uremia develop in a case of long standing obstructive jaundice. In obstructive jaundice, usually due to a carcinoma where the patient may have lived long enough, blood urea nitrogen may go up and the patient may develop uremia. If you look at the kidney you will find certain pathologic changes which are called bile nephrosis. Incidentally, these changes

are identical to the changes that you will see in a patient such as the one under discussion today. In the obstructive jaundice cases it is believed the damage to the tubules is due to bile salts coming down in increased concentration effecting the tubules, causing a toxic nephrosis. I do not know whether that is the cause, but clinically you will see such cases of biliary nephrosis.

On the twenty-fourth day mercurial diuretics were started. I think that was proper and do not think that had anything to do with causing the uremia. If I knew at that time that the patient had a markedly elevated blood urea nitrogen, I would not give mercurials then merely on the basis that I knew the patient already had renal tubular damage. Diuretics are used in cirrhosis and are effective many times in alleviating edema and the ascites. I notice that the patient developed diarrhea after mercurials were given. This diarrhea may have been on the basis of the cirrhosis which is not infrequent. Cirrhotics develop an enteritis and the diarrhea may arise from the increase in the portal pressure affecting the mesenteric veins. It may have been due to diuretic itself. If a patient does develop diarrhea, stop the diuretic; if a patient already had a diarrhea, do not give a mercurial diuretic. If a mercurial diuretic is to be given to a cirrhotic, the patient should be on a low-salt diet before instituting the diuretic.

The patient had a hemorrhage. Hemorrhages may be caused by many factors. Of course, the most frequent is the increase in portal pressure with bleeding from the esophageal varices. In the later cases, in cholemia frequently, the hemorrhage is due, not to increase in portal pressure, but due to changes in the blood itself or changes in the capillaries. The patient may get a low prothrombin time. The bleeding may be due to depressed prothrombin, lack of platelets or low fibronogen. The bleeding may be due to some associated condition such as a peptic ulcer which occurs a little more frequently in cirrhotics than in normal individuals. Some of the French authors used to think that some gastrointestinal bleeding was due to a ruptured spider nevus. I have asked Dr. Bean about that, and he does not think that is so. It is a difficult thing to prove or disprove, because the spider nevi disappear in death.

I also note the patient had nasal bleeding. Nasal bleeding is not an uncommon finding in cirrhosis. Lichtman maintains that nasal bleeding and pharyngeal bleeding are similar phenomena as esophageal bleeding; in other words, are due to increased collateral circulation and increase in portal tension. Perhaps that is so, but another cause of nasal bleeding is the fact that the mucosa of the nasal septum is markedly hyperemic. There are many vessels and these frequently bleed, particularly if Levin tubes are placed through the nose. More important than nasal bleeding, care must be used in passing any tube in the esophagus to prevent bleeding from esophageal varices.

Whether this patient died of cholemia or of

uremia or a combination of both, is an academic question. He died in coma, probably of both.

There was one thing I forgot to mention. The students and those on the wards rightly considered hepatoma. I know of no definite way to rule out hepatoma in such a case. Biopsy may or may not help you. All of these symptoms that this patient had occur in hepatoma. Any time one has a patient with cirrhosis, with a huge liver, a rapidly fulminating course and even uremia, one must consider hepatoma as a possibility.

Dr. Bean will now discuss some features of cirrhosis which he has been particularly interested in.

Dr. William B. Bean (Medicine): This patient presents manifestations of nutritional deficiency in addition to cirrhosis. I might mention that he had a rather characteristic story of having noticed himself, the development of vascular spiders. The observation that a person has one or a few vascular spiders is of no consequence clinically since they appear in many normal people. One should be disabused of the notion that they have any specificity of indicating chronic liver disease; but where there is a story of them having appeared in a person who did not have them previously, chronic liver disease is generally found. In women, of course, they occur frequently during pregnancy.

The nutritional problem this patient brings up is one of the evaluation of a red tongue, described as magenta in color and the scaling and induration at the angles of the mouth. Angular stomatitis, cheilosis or cheilitis was originally described in malnourished persons by Stannus in Africa in 1916. It was produced experimentally by Sebrell and Butler in 1937 at a time when they were able to provide a generally B-complex deficient diet supplemented with nicotinic acid and thiamine, a diet particularly low in riboflavin. When they gave riboflavin, these sores at the corners of the mouth disappeared after about three weeks of therapy. On a similar diet in which riboflavin was included, lesions did not occur. Therefore, they concluded that this was a specific and pathognomonic lesion indicative of a deficiency of riboflavin. Since that time people on controlled diets and under careful observation on metabolic wards have been found in whom the cheilosis did not respond when riboflavin was given, but did respond when pyridoxine, pantothenic acid, Brewer's yeast or crude liver extract was given after they failed to respond to riboflavin. We can only say there is a non-specificity about them. An additional variety occurs in people with ill-fitting dental plates or with no teeth whose jaws override when plates are not used. There is a macerated moist area at the angles of the mouth which cannot be distinguished on clinical grounds from a similar lesion which appears in malnourished people.

The nature of the magenta tongue is still more obscure. It has been described as a characteristic finding with riboflavin deficiency, and it does, indeed, have a magenta color which is quite different

(Continued on page 29)

The JOURNAL of the Iowa State Medical Society

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1951 Ahead

Once again as we begin a new year, it is time for the JOURNAL to extend to its readers best wishes for the holiday season, especially as we face the possibilities of the year ahead.

As you will note, this issue marks somewhat of a change in the appearance of the JOURNAL. This has come about through the selection of a new publishing house which entails the use of somewhat different type and a slight rearrangement of the individual pages. In conformance with the policy of the editorial board it is our desire to make this publication not only attractive and readable but containing information of the greatest value to each reader. Perhaps it is fitting at this time to say that many physicians would be doing a great favor by taking the time to submit an original article for publication during the coming year.

The medical profession is again faced with the situation of supplying the demands of the armed services of the country. With the approaching final registration of all physicians under the age of 50, it should be pointed out that our obligation must be fulfilled. Frequently physicians labor under the impression that a doctor draft is discriminatory. It is equally apparent that the best interests of the nation must be served, often at the expense of the individual. A large number of Iowa physicians have creditably served in the various branches of the armed forces in our previous wars. There are many doctors in the state who have never had the opportunity to make their contribution which all physicians must consider as just if the ideals of the United States of America are to be maintained. Whatever the coming year brings forth it is inevitable that the medical profession will continue to

do its share in fulfilling the requirements of our armed services.

In spite of the slight gains of the past year in postponing the threat of governmental medicine, the individual physician still remains the most important member of the team which is striving to avoid the evils of socialized medicine. The trust in our position as already implied by the support of the public demands that we redouble our efforts in 1951. If each doctor will constantly bear in mind that his efficiency not only in his office but in the handling of emergency calls at night will accomplish much in the furtherance of good public relations and serve as a shining example that the practice of medicine as now advocated is far superior to any type of medicine as controlled by a governmental bureau.

There is a great tendency these days to look for something for nothing. It is a well established truth that no one can give you anything. In 1949, the federal government said it "gave" to the states five and one-half billion dollars. That money, of course, first came from the states. But 625 million of these dollars never got back to the states; that was the cost of taking the money and giving part of it back. When anyone promises you something for nothing, you can be sure he gets a lot of something and you get a lot of nothing.

With the advent of a reorganization at hand, the JOURNAL again invites suggestions which in any way will make this publication more valuable to the reader. Your interest and cooperation are invited with respect to our advertisers so that they may appreciate that their contribution to the JOURNAL stimulates your interest in the product being advertised. Without the cooperation of our advertisers it would be most difficult to carry on the publication of the JOURNAL. We sincerely hope that 1951 will bring you increased happiness and benefits from your membership in the Iowa State Medical Society.

Cancer Educational Campaign

At the annual meeting of the Iowa Division of the American Cancer Society held in Des Moines in October, 1950, details were announced of a plan to make Iowa the first test state in a "before and after" educational campaign against cancer.

The United States Public Health Service will direct the campaign in conjunction with the Iowa Division of the American Cancer Society, the State Health Department and the Iowa State Medical Society. Selection of Iowa as the first test state was made because of the close cooperation between these groups.

County by county efforts will be made to literally saturate the state with the 15 minute color movie "Breast Self Examination." This film instructs women how to examine themselves for breast cancer, which is responsible for over 400 deaths yearly in Iowa. Twenty-eight prints of this film have been purchased so that any woman's or-

ganization desiring to have a showing of the film will be assured that a copy will be available.

A survey to determine how many cases of all types of cancer exist in Iowa began November 1. Unlike certain contagious diseases, cancer cases are not reported to state officials. After its completion, the education program will start. Two years from now a second survey will be made to test the effect of this concentrated drive. It is hoped to prove that Iowa women will have discovered symptoms of breast cancer at a much earlier and much more curable stage.

In Iowa cancer causes approximately one death in every six, or about 4,100 deaths each year.

The state has ten cancer clinics: The Linn County Cancer Clinic, Cedar Rapids; Clinton County Cancer Clinic, Clinton; Pottawattamie County Cancer Clinic, Council Bluffs; Broadlawn Hospital Cancer Clinic and Veterans Administration Hospital, Des Moines; McNamara Memorial Hospital, Dubuque; University Hospital (departmental clinics), Iowa City; Cerro Gordo County Cancer Clinic, Mason City; Wapello County Cancer Clinic, Ottumwa and Woodbury County Cancer Clinic, Sioux City. There are no cancer detection centers.

Cytology test services are available at the Clinton County Tumor Clinic, Clinton; the Lutheran Hospital, Mercy Hospital and Methodist Hospital, Des Moines; Finley Hospital and Mercy Hospital, Dubuque and the University Hospital, Iowa City.

There are approximately 2,900 physicians in the state, 106 general hospitals which meet the requirements for registration by the American Medical Association and 8,600 general hospital beds.

There are visiting nurse associations or similar organizations in Burlington, Cedar Rapids, Clinton, Council Bluffs, Davenport, Des Moines, Dubuque, Fort Dodge, Grinnell, Keokuk, Marshalltown, Mason City, Muscatine, Sioux City and Waterloo.

The State Health Department has conducted a Cancer Control Program since 1947 when the State Legislature made the first appropriation for this purpose. The activities include aid to the ten cancer clinics at which patients referred by their physicians may receive cancer diagnostic services without charge.

In November, 1950, the Iowa Division of the American Cancer Society began distribution of CA, a bulletin of cancer progress, to all Iowa doctors and senior medical students. This publication will continue to be mailed in the future with six issues scheduled for 1951.

With these efforts being made, it is hoped that the incidence of cancer may be lessened during 1951.

AMA Gives Half Million for Medical Education

Highlight of the recent session of the House of Delegates of the American Medical Association at Cleveland was a called meeting the morning of December 6 at which time Dr. Louis H. Bauer, chair-

man of the Board of Trustees, announced that the trustees had unanimously voted a fund of half a million dollars from its dues to be used for helping medical schools in the United States. Dr. Bauer commented that on the whole the medical profession opposed federal aid to medical education because of the fact that such aid would inevitably lead to dictation by the source providing the funds. He said the appropriation would be used to set up a fund which will be available to medical schools in their basic training of future physicians and will be without restrictions.

Twenty-four hours later, Dr. Bauer announced that one of the wishes of the board of trustees had been realized in that contributions in the amount of over \$20,000 had been pledged to the fund. *Medical Economics* pledged \$5,000 for the year 1950 and for 1951 it pledged \$5,000 plus \$5,000 worth of advertising space to be used as the AMA sees fit in endeavoring to increase the fund. Various officers and members of the Association pledged \$6,100 in the first 24 hours. At this point, Dr. Bauer asked that other physicians wishing to participate simply notify the trustees of their intention but withhold checks until the proper organizational steps can be taken.

Many physicians expressed a desire to join in building up this fund for medical education. All doctors realize that their own education was made possible by endowments of funds which supplemented the tuition fees they paid, since no school charges a fee high enough to cover the entire cost of medical education. Realizing that they have benefited from the benefactions of others, they evidenced a strong determination to repay that debt by helping in the new endowment which should prove a great boon to schools in financial distress.

This appropriation of a half million dollars, plus the additions that will be made to it, is a constructive action. It will permit the American Medical Association and its physicians to give great assistance to the cause of medical education. We feel the board is to be commended on selecting this particular means of proving its intention to do all it can to provide the best medical care to the people of our country.

It may be betraying a secret but we hope that in the next issue of the JOURNAL we will be able to bring an announcement from our own board of trustees that will have far-reaching significance.

Fracture Service at Iowa City

As the result of the cooperation of Carroll B. Larson, chief of orthopedic surgery and Nathan A. Womack, chief of surgery, a new and separate service has been set up at the State University Hospitals for the care of fractures. All surgeons from the surgical department interested in the treatment of fractures have joined with the orthopedic department to comprise the staff for the Fracture Service. The splendid spirit of team play in frac-

ture treatment that has resulted warrants this announcement to the doctors throughout the state.

The service operates in the following way: Any referred case of fracture is immediately seen by a senior surgical and a senior orthopedic resident. An appointed staff surgeon from the surgical department and the orthopedic department is then consulted for disposition of the case, and treatment is carried out.

A weekly fracture rounds is held, and each fracture that received treatment the preceding week is discussed. These discussions are lively, critical, instructional and stimulating.

We are hopeful that as the Fracture Service accumulates sufficient numbers of cases to make standardization possible, the way will be pointed to improved methods of fracture care. Such a program, to be successful, solicits the cooperation of doctors throughout the state, not only for the referral of cases, but attendance at fracture rounds. A cordial request is extended to all to attend whenever possible the rounds held each Thursday at 4:00 p. m. Such attendance invites the entrance into the general discussions so that common experiences might be shared.

Lymph Node Biopsy

An interesting review was recently made* regarding the efficiency of lymph node biopsy. In a series of 600 biopsies approximately 56 per cent established a definite diagnosis. In 262 cases the nodes were either inflammatory or inadequate for diagnosis. The remaining 338 specimens revealed specific inflammation or neoplastic changes.

In this series the greatest incidence of biopsies positive for tuberculosis appeared in the 20-29 year age group. Fifty-nine per cent of the cases occurred in females and the disease was found four times as frequently in the Negro as in white patients.

The series included 40 cases of lymphosarcoma, about half of which were diagnosed from cervical node biopsy. Hodgkin's disease was found to be three times more common in males than in females. Metastatic carcinoma was present in 95 specimens, with greatest incidence in the 40-70 year age group. Metastases of squamous cell carcinomas were predominantly found in males and in the white race.

The cervical nodes showed the highest incidence of positive results, whereas the inguinal nodes gave the lowest. Tuberculosis was diagnosed in about one eighth of the cervical biopsies; 55 per cent of all the inguinal nodes disclosed chronic nonspecific lymphadenitis.

Recently other pathologists have called attention to the fact that it is not always possible to establish a definite diagnosis from microscopic examinations alone. There has been a tendency to neglect the importance of bacteriological studies concomitant with the preparation of the routine

slides. Properly carried out bacteriological studies can do much toward establishing the diagnosis in certain inflammatory conditions such as brucellosis, actinomycosis and tuberculosis where a study of the material under a microscope might easily prove equivocal.

Pathologists may still accomplish much in assisting the clinician to reach an exact diagnosis. Their efforts to improve technics to establish an early diagnosis will insure better medical care for the patient suffering from an otherwise obscure disease.

Public Law No. 791

A law recently enacted by Congress provides that all veterans of the Spanish-American War may receive outpatient treatment for all medical conditions or disabilities. Furthermore, these conditions will be considered as service-connected.

Treatment will include house and office calls but not hospital treatment. Drugs necessary for the treatment of these veterans may be furnished by a dispensing physician and will be replaced upon requisition by him to the Veterans Administration or a participating pharmacist. He cannot be paid for the drugs, but they can be replaced. Physicians who prescribe rather than dispense may send the patient to any participating pharmacist. Prescriptions used for this purpose should be designated by the following comment endorsed thereon: "Currently authorized to treat this veteran for his service-connected disability."

These veterans may receive emergency treatment up to 15 days. Request should be made to the Veterans Administration with 14 days for continuation of the treatment. Authorization for continuous treatment should be requested through the Veterans Administration on Form 2690. These authorizations are currently issued between the 23rd and first of the following month.

The Veterans Administration informs us a few physicians are still not returning complete examination forms and are delinquent in requesting authorization on Form 2690. Both of these omissions force the Veterans Administration to delay paying claims until the error can be rectified.

A Labor Leader Denounces Socialized Medicine

The House of Delegates of the American Medical Association was asked to remain in Cleveland a half day following its recent session in order to meet with members of the Co-ordinating Committee for the National Education Campaign. It was most inspiring to see the large ballroom of the Statler Hotel filled to overflowing with persons vitally interested in progress reports of the campaign.

The last paper, one which was broadcast over a national network, was entitled "Socialized Medicine Is No Bargain," written by Mr. William L. Hutcheson, general president, United Brotherhood of Carpenters and Joiners of America and vice-president of the American Federation of Labor. Due

* Brindley, P.; Miller, G. V.: Analysis of 600 lymph node biopsies. *Texas State J. Med.* 46:230-234 (April) 1950.

to Mr. Hutcheson's illness it was presented by Mr. Peter E. Terzick, editor of *The Carpenter*.

Mr. Hutcheson said he was against socialized medicine and so was the organization which he had the honor of heading. He quoted figures and experiences from the British National Health Service and said 54 per cent of the total membership of his organization had voted down a resolution to support a national health program in this country.

Because his talk was forceful, excerpts are quoted herewith:

"If the day ever comes to America when Uncle Sam usurps the power to dictate to doctors under a health plan, it will be a sad day for carpenters. Adequate housing is still an unsolved problem in this country, especially for the poor. If it is logical to nationalize the medical profession to get more medical service for the poor, it is equally logical to nationalize the home construction industry to get roofs over the heads of the lower income groups.

"I do not know much about doctors but I know quite a bit about carpenters. Carpenters want to be free agents, free to work where they want to; free to negotiate the terms of their wages and working

conditions through collective bargaining; yes, even free to leave the industry and try their luck at something else if the spirit moves them.

"They will retain these freedoms only so long as all other groups retain theirs. Socialized medicine would only be the first bite out of our free enterprise system; it would not be many years before the carpenters would be feeling the teeth of socialization on the seats of their overalls. Any way you look at it, socialized medicine is no bargain and the carpenters want none of it.

"I have always respected the medical profession for the fine contribution American medicine has made to human welfare. As I watched your battle against regimentation during the past two years, I have added to that respect. The physicians of this country have shown that they are willing to fight for their conviction. I salute you today not only as doctors but as crusading citizens as well. We in the labor movement have our own cross of regimentation to bear. The fight you are making is part of the same war. It is a war against concentration of authority in a few hands in Washington. As a veteran of 40 years in the labor movement, I know what it is to fight for human rights. I am happy to take my stand beside you."



President's Page

Dr. Dean Sherwood Luce of Canton, Mass., was chosen the outstanding general practitioner of the year by the House of Delegates of the American Medical Association at its Cleveland meeting. Dr. Luce then came to Cleveland to receive the award and remained the balance of the session.

The other two physicians nominated for the award were Dr. Jim Camp of Pecos, Texas and Dr. John William Strange of Loogootee, Ind.

Dr. Luce was born in 1876 and has practiced in Canton for over 40 years. Good as his record is, I cannot help but feel we have many doctors in Iowa who have served their communities long and faithfully, doctors who are as fully deserving of the honor as Dr. Luce.

Procedure is for a county medical society to nominate one of its physicians to our House of Delegates, which will select one and enter his name with the Board of Trustees of the American Medical Association for consideration at their next mid-winter meeting. So far, no Iowa county has taken the lead in thus honoring one of its physicians. Citizens of various communities have not been so backward; our files contain records of many physicians being greatly honored by the people they have served. Why don't we physicians get behind this type of recognition for one of our own members?

I would like to have Iowa enter a nominee for this award at the next mid-winter meeting of the American Medical Association. I also want to call attention to the fact that many Iowa physicians are eligible for Fellowship in the American Medical Association. In the past, Fellowship dues have been \$12 a year and have included a subscription to the *Journal of the American Medical Association*. Hereafter all doctors who pay the \$25 dues of the American Medical Association will receive the *Journal*. This, however, does not make them a Fellow, nor did a mere subscription to the *Journal* in the past.

Application for Fellowship should be sent to the secretary of the American Medical Association and will be acted upon by the Judicial Council. Iowa has 1,100 Fellows and 2,500 members. If you are in doubt about your status, write the central office and it will try to advise you as to whether or not you are a Fellow.

T. F. Thornton, M. D.

President, Iowa State Medical Society

NEWS NOTES

From The Committee On Medical Service And Public Relations

REPORT OF NATIONAL MEDICAL PUBLIC RELATIONS CONFERENCE

The third Annual Medical Public Relations Conference of the AMA was held in Cleveland, Ohio, December 3 and 4 at Hotel Statler. There were more than 345 registrants at the conference.

The theme of the meeting was county medical society public relations. The keynote address was delivered by Dr. John W. Cline, San Francisco, President-Elect of the AMA, who discussed "Serve Your Profession Through Public Relations." He believes it is important that national public relations conferences of this type be held in order to enable the various societies throughout the country to get together and exchange ideas on their public relations programs and technics of carrying them out.

Dr. Cline gave an appropriate definition of public relations: "Do good and tell the world about it." We must be ready to revamp our overall plans in public relations because of the apparent changes that are taking place in all levels of society. Before attempting to draft a public relations plan for a medical society, a definite study should be made to determine the problems which need attention. One of the greatest responsibilities of American medicine today is to assist and advise the people in the value of voluntary health insurance. The doctors are in perfect position to implement the activities of all good insurance companies providing health care, he said.

Dr. Cline outlined some of the public relations projects he believes should be in effect:

Doctors

(A) must assume the responsibility of improving individual doctor-patient relations.

County Medical Responsibilities

(A) educate the profession of apparent public attitudes.

(B) indicate public objections to methods of practice.

(1) fees

(2) availability of physicians

(3) courtesy to patients

(C) develop all public relations projects at the local county level.

(D) establish a mechanism to reprimand unethical practices of physicians.

(E) engage in civic activities.

(F) maintain good relations with the press at all times by keeping them informed.

State Society Responsibilities

(A) coordinate the activities of the county society

(B) furnish good leadership

American Medical Association

(A) leadership through state society to county society

(B) assemble and disseminate information

(C) intraprofessional relations

(D) educate the profession of AMA activities—the profession and public must be advised of the tremendous public service rendered by the AMA.

It was Dr. Cline's opinion that if organized medicine had recognized these public relations problems five years ago, the medical profession would not have come into the abuse it received during the past few years. The doctors of this country were not desirous of actively entering into politics but the attitudes of some national leaders forced this action upon them. He stated that the opposition to compulsory health insurance, expressed by 65,000 groups related and unrelated to the practice of medicine, should give these proponents of compulsory legislation to understand that the American people are not desirous of further intervention of federal control in their everyday lives.

Dr. Cline closed with this statement: "This is no time to relax. Our opponents have doubled their onslaught and are awaiting an opportunity to break through our guard. We must have coordinated activities between all branches of medical organization."

The afternoon of the first session was spent discussing ground work for successful public relations programs. Dr. Russell B. Roth, of Erie, Pa., discussed "Who Directs the Work?" Dr. Roth believes the chain of command should be programs developed at the AMA, passed to the state society; state society to county society; county society to a committee of county members who in turn accept the responsibility of informing all the members at the local level. Through this method of disseminating information he believes the counties at all levels will become and remain active. The success of a public relations program depends entirely on the activity of the local county society committee. "In Erie County, which I represent, the executive council serves this purpose," Dr. Roth said. "It was a difficult job developing a smooth-working, executive council but after many varied attempts we finally succeeded. The president of our county medical society came up with a solution by inviting the members of the executive council to his home once a month for an informal meeting. The president believed that if he served a dinner and a limited number of cocktails it might entice the members of the executive council to be present. Absenteeism from these council meetings has been nil."

Dr. Roth said that as a result of this active executive council of the Erie County Medical Society, they were able to develop a well-planned, coordinated program with Whitaker and Baxter, a functioning speakers' bureau and a disaster crew which received national publicity when it rendered emergency care at the scene of the recent train disaster.

The next speaker was Mr. Arthur P. Tiernan, Evansville, Ind., Executive Secretary of Vanderburgh County Medical Society, who spoke on the subject "Who Pays the Bills?" Mr. Tiernan's discussion related to the financing of a county medical society headquarters office by receiving the money provided for the care of county patients for the services rendered by the members of the Vanderburgh County Medical Society. From his explanation, one would conclude their county medical society functions in a manner similar to that of Polk County in Iowa.

Some of the other subjects discussed during the final day of the session were: "A Family Doctor for Every Family" by Dr. Eugene A. Ockuly, Toledo, Ohio, who constructed his talk on the importance of each family having an understanding with a local physician that he is to be their family doctor and will serve them as such when needed.

"Community Health Projects" were discussed by Dr. Fred Sternagel of West Des Moines, Iowa, representing the Iowa State Medical Society. He explained the medico-dental bureau and its functions; the cooperation between Polk County physicians and the various health agencies—TB association, cancer society, etc.; doctors' secretaries meetings and care of the patients at Broadlawns.

"PR Approach to Business Methods," pertained to insurance programs, credit and collection services and emergency telephone service.

"Working With Other Health Professions" was the subject discussed by Dr. William M. Skipp, Youngstown, Ohio. He discussed cooperation between the health professions—interprofessional relations.

"Promoting Voluntary Health Insurance" was discussed by Dr. Carl F. Vohs, Clayton, Mo., President of the Missouri Medical Service. He elaborated on the responsibility of physicians in the promotion of voluntary insurance.

"The Doctor and Civilian Defense" was discussed by Dr. Frederic B. Davies, Scranton, Pa., Committee on Emergency Disaster Medical Service, Medical Society of State of Pennsylvania. Dr. Davies outlined the organization of a civil defense program as it effects doctors.

For the afternoon we were asked to divide into three sections, one for medical public relations in a small community (under 100,000); section two, medical public relations in a medium sized community (100,000 to 500,000); section three, medical public relations in a large community (over 500,000). We were represented at the second and third group.

Most of the discussion was on the functions of a grievance committee but no conclusions were drawn, merely a thorough airing of the problem. Some societies felt these committees should be publicized, others felt that they should not. Some believed they should be called grievance committees and others believe the title "grievance" invites trouble. It all resolved to the point that policies of a state or county medical society should be developed at the source with consideration for experience gained in other areas.

There was discussion on the advisability of including medical economics as a part of a medical students education. A few of the doctors expressed the opinion that young physicians of today are going out into practice uninformed on how to conduct the business end of the practice of medicine. This was left to the consideration of each society.

It was the general consensus of the persons who attended this third annual public relations conference that it was, without doubt, the best and most complete program ever developed by the AMA Department of Public Relations. The representatives from Iowa who attended this meeting all agreed that a great deal of information was gained by their attendance.

CLINICOPATHOLOGIC CONFERENCE

(Continued from page 22)

from the fire-red erythema of acute pellagrous glossitis. However, here too, the specificity of this sign and its nature is not clear. The color of the tongue is quite distinct from cyanosis of the tongue and quite distinct on the other hand from acute erythema of glossitis which has the color of well-oxygenated arterial blood, a bright red. However, it too, has failed to respond in certain instances. In my experience, it is much more common in women than in men with similar degree of this difficulty.

I notice nothing of therapy in the protocol. When one encounters a stigma of nutritional B-complex deficiency, therapy has to be given in heroic doses under certain circumstances. It does not do just to supply five, ten or 15 times the average daily requirement; it may take literally hundreds of times what would be the average daily requirement which has not been satisfied in order to relieve the lesions and restore integrity and normality. A curious thing about riboflavin deficiency, when the angles of the mouth and tongue do revert towards normal, instead of behaving as a neuropathies of beriberi or the glossitis or dermal erythema of pellagra, it takes between two and three weeks for the lesion to disappear and for normality to be resumed. Therefore, one should not give up therapy or reduce its intensity if the response is not rapid or immediate.

Dr. Raymond G. Bunge (Urology): Was the brain normal?

Dr. John R. Carter (Pathology): Yes, the brain was normal.

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

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THE HISTORIAN REQUESTS

The happenings of today become the history of tomorrow. Help us to make the 1950-1951 record complete. We would like to have available newspaper clippings of Auxiliary activities and projects and accounts of deaths of members. We want our *In Memoriam* to be accurate, and we would like as full a history of county auxiliaries as possible. Space is, of necessity, limited on this page. Let each auxiliary cooperate by sending all available information to:

Mrs. Allan G. Felter, Historian
Van Meter, Iowa

NEW DEADLINE

Due to a change in publishing houses, it is imperative that all copy intended for publication in *The Woman's Auxiliary News* be in the hands of the publication chairman not later than the sixth of the month preceding publication.

SCHOLARSHIPS FOR NURSES

The Iowa Division of the American Cancer Society has made available, for the third consecutive year, 50 three year nursing scholarships. The Iowa Society was the first in the United States to set up such a program. There are 93 nurses in training in 23 schools in Iowa as a result. The scholarships grant tuition, fees, books and uniforms for three full years at any accredited Iowa nursing school.

YOU COULD DO THIS

The National office has prepared a packet of material on the subject, "Resolved, That the American People Should Reject the Welfare State." This material might be used in your local high school or study groups. It is free and may be obtained from the American Medical Association, 535 N. Dearborn, Chicago 10, Ill.

DALLAS-GUTHRIE AUXILIARY

Following luncheon with the doctors November 16, at the Horse n' Buggy in Adel the Dallas-Guthrie Auxiliary held its regular meeting. The Auxiliary voted to support a State Yearbook to the extent of \$3.00. The following officers were elected for 1951: president, Mrs. Charles S. Fail, Adel; presi-

dent-elect, Mrs. Frank A. Wilkie, Perry; first vice-president, Mrs. C. Robert Osborn, Dexter; second vice-president, Mrs. Robert F. Deranleau, Perry; secretary, Mrs. Donald W. Todd, Guthrie Center, and treasurer, Mrs. William V. Thornburg, Guthrie Center.

Mrs. Claire H. Mitchell, State Auxiliary President, reported the organization of two new county auxiliaries. She stressed the need for organization and support of health councils with emphasis on participation by the doctors as well as their wives. She stated the AMA's three requests of all auxiliaries:

1. Sell *Today's Health*.
2. Become informed and inform others.
3. Combat trends toward the Welfare State.

Mrs. Charles E. Porter

COUNTY AUXILIARY MEETINGS

The Marshall County Medical Auxiliary participated in the Sixth District Councillor Meeting at Marshalltown on October 3. Mrs. Claire H. Mitchell, State Auxiliary President, attended and urged doctors' wives to become more active in local groups. She discussed the importance of voting and keeping informed on legislation pertaining to medicine.

Mrs. Milo E. Jeffries, Marshalltown

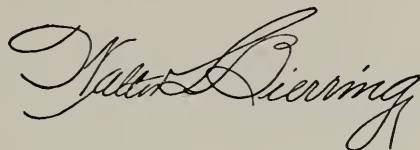
The Sioux City Auxiliary held a nurse recruitment program in conjunction with the Adult Education program of the Rock Valley Public Schools Parent-Teacher Association meeting. Mrs. Cornelius B. Murphy of Alton, former public Health nurse and now a member of the Sioux City Auxiliary, was the guest speaker. A nursing film was shown.

A student nurse, Marilyn Jacobson of the Sioux City Lutheran Hospital, will be the guest speaker at a February tea to be held in the home of Mrs. Lester R. Hegg of Rock Valley. She will speak on nurse recruitment. Compiled and correlated lists of available scholarships and loan funds will be discussed.

Mrs. Lester R. Hegg, Rock Valley

The auxiliary members of the Wapello County Medical Society are looking for ways to earn money. Each member must earn \$10 for the auxiliary before March 1.

STATE DEPARTMENT OF HEALTH



HOW PUBLIC HEALTH WORKS

THE SITUATION

A practicing veterinarian in the southern part of Iowa submitted a dead ferret to the Iowa Veterinary Diagnostic Laboratory for examination for rabies. The laboratory report indicated rabies was present. While the list of domestic and wild animals in which the disease is reported in Iowa is quite extensive, including even ground hogs and badgers, this was the first report of the infection in a ferret. Epidemiological investigation by the Division of Preventable Diseases of the State Department of Health revealed the following facts:

A man with a number of ferrets had appeared in a small southern Iowa town. He solicited various business establishments to contract for elimination of rats by the use of his ferrets. During his stay in the town two persons bought ferrets from him. One of the ferrets died three days after purchase. The other animal died 12 days after purchase and it was this animal that was found to be infected with rabies. It had bitten the new owner and anti-rabies vaccine was being given. Considering the length of the incubation period for rabies together with the fact that this animal had not been exposed to other animals subsequent to purchase by the new owner, it was concluded that the animal must have been infected prior to the purchase. No one in the area knew where the man had worked before he came to town nor his intended route of travel for subsequent work. Neither could his final destination be learned. A description of his automobile and the trailer in which the ferrets were transported was obtained. The vehicles bore Kansas license plates but the license numbers were unknown.

THE PROBLEM

Here a group of animals, probably infected with rabies was being transported about the country. The probability of spreading the disease and establishing new foci of rabies infection in Iowa and other states was definite. How could the owner be located and notified of the danger? How could the animals be found and placed under observation?

THE ACTION

The Division of Public Health Education of the State Department of Health, prepared press and radio releases which requested persons knowing

the whereabouts of the ferrets or the owner to contact the State Department of Health. Newspapers throughout Iowa carried the story. Since the automobile and trailer bore Kansas license plates, it was believed the man was a Kansan. Because of this, the Kansas State Health Department was notified of this occurrence by the regular reciprocal procedure. In this way it was hoped either to find the man still working in Iowa or to locate him in his home state of Kansas.

THE RESULTS

As a result of the press notices the Iowa State Department of Health received information to the effect that the ferret owner had been in several communities in Iowa but no indications that other sales of animals had been made. Furthermore, a photograph of the man and some of the ferrets, which had been taken at the time of his appearance in one community, was sent to the State Department of Health.

The Kansas State Health Department took immediate action and by cooperation of the Kansas Motor Vehicle Division, the owner of the ferrets was located in his home county in Kansas. Upon investigation there it was learned that he had returned to Kansas because his ferrets had been destroyed by a disease which he thought was distemper. He had been bitten and was advised to take Pasteur treatment. Four dogs that also had been used in the rat elimination activities were placed under observation.

This is an example of results obtained by cooperation. Public Health work is a team activity. While this problem involved persons and activities ranging from the practicing veterinarian, the diagnostic laboratory, the State Health Department staff, the press and radio of the state, reciprocal notice and response by a neighboring state and the State Highway Patrol, to the final investigation by the local health officer, another problem might vary in pattern but if it were to be successfully carried out it would involve an equally wide range of cooperating groups to form a team.

CANCER MORBIDITY SURVEY

Cancer is the second leading cause of death in our country. All the statistics now available concern the number of deaths; there is little precise information concerning the number of persons who have cancer. In fact, the only such information

available today is that collected by the Public Health Service from certain metropolitan areas. A state-wide survey including rural population has never been made anywhere.

The Iowa State Medical Society and the Iowa State Department of Health have endorsed, and will cooperate in the State-wide survey of cancer prevalence in Iowa, to be made by the National Cancer Institute and the Division of Cancer Control.

The survey will cover all cases of cancer diagnosed, treated, or observed by physicians, hospitals and clinics in Iowa, during 1950. The data will be collected by means of a questionnaire mailed to each physician, hospital and clinic. Physicians not returning the questionnaire will be followed up by telephone or personal visit in order to obtain complete coverage. Separate arrangements will be made with the larger hospitals and with specialists having a large number of cases, for assistance in abstracting data from their records. Data on persons dying from cancer will be obtained from records in the State division of vital statistics. This procedure has been successfully used by the National Cancer Institute morbidity surveys in ten large metropolitan areas during 1938-39 and again in the some areas during 1948-1949.

The data collected will show:

a. The number of diagnosed cases of cancer in the entire state and for the separate counties and cities.

MORBIDITY REPORT

Diseases	Nov. 1950	Nov. 1949	Oct. 1950	Most Cases reported from:
Diphtheria	2	1	3	Dubuque
Scarlet Fever	30	42	15	Boone, Grundy, Iowa
Typhoid Fever	0	2	0	
Smallpox	0	0	0	
Measles	17	135	20	Grundy, Union, Washington
Whooping Cough	101	12	122	Allamakee, Dubuque, Linn
Brucellosis	8	16	5	Scattered
Chickenpox	103	97	70	Black Hawk, Johnson, Woodbury
Influenza	0	0	0	
Men. Meningitis	1	7	3	Polk
Mumps	59	87	47	Boone, Des Moines, Linn, Polk
Pneumonia	7	3	9	Polk (4), Black Hawk, Marion, Washington, 1 each
Poliomyelitis	109	132	272	Des Moines, Keokuk, Polk
Rabies in Animals	13	7	22	Polk (5), Johnson (2), others scattered
Tuberculosis	66	47	69	For the state
Gonorrhea	56	81	59	For the state
Syphilis	138	158	140	For the state

b. Variations in cancer morbidity according to age, sex and primary site and residence in the county or in the city.

c. The clinical stage of disease at diagnosis as a measure of delay. This information is important in developing programs to promote earlier diagnosis.

d. The number of cases treated for cancer without having a microscopically confirmed diagnosis. This can be used for improving diagnostic procedures and facilities.

e. Current survival rates for different kinds of

cancer in various parts of the State. Survival rates for the first year after diagnosis can be obtained from the survey, and procedures can be set up for later obtaining survival rates for subsequent intervals of time.

It is hoped that the project will be started immediately after the first of the year and it is estimated that it will require about 12 weeks. A summary of the findings will be published and it is probable that a re-survey will be made after several years for purposes of comparison. Iowa is fortunate in being selected as the site of the first state-wide survey. The results of the study will be noted and followed by cancer control workers throughout the nation.

ROSTER OF IOWA PHYSICIANS IN MILITARY SERVICE

As of December 15, 1950

Alberts, M. E., Des Moines (Des Moines)	Lt. (jg), U.S.N.R.
Allen, M. B., Fort Dodge (Fort Riley, Kan.)	Capt., A.U.S.
Bartholomew, R. D., Lake City (Oakland, Calif.)	U.S.N.R.
Bartley, R. L., Sully (Pensacola, Fla.)	U.S.N.R.
Bliss, W. R., Ames (Chicago, Ill.)	Capt., A.U.S.
Camp, J. R., Thompson (San Diego, Calif.)	U.S.N.R.
Carson, R. W., Winterset (Camp Stoneman, Calif.)	A.U.S.
Johnson, F. N., Madrid (San Antonio, Texas)	1st Lt., A.U.S.
Johnson, M. H., Iowa City (Tacoma, Wash.)	Capt., A.U.S.
McCrary, W. A., Lake City (Fort Riley, Kan.)	1st Lt., A.U.S.
Montgomery, A. E., Jefferson (Pittsburg, Calif.)	Lt. Col., A.U.S.
Robb, W. J., Cedar Rapids (San Diego, Calif.)	U.S.N.R.
Smith, C. B., Iowa City (Fort Sam Houston, Texas)	A.U.S.
Smith, H. J., Des Moines (Des Moines)	Lt. Comdr., U.S.N.R.
Tempel, P. F., Steamboat Rock (Fort Riley, Kan.)	A.U.S.
Thornton, T. F., Jr., Waterloo (Great Lakes, Ill.)	Lt., U.S.N.R.
von Lackum, L. F., Oelwein (Oakland, Calif.)	Lt. (jg), U.S.N.R.
Wehrmacher, W. H., Iowa City (Oceanside, Calif.)	U.S.N.R.
*Wilkins, D. S., Iowa City (APO San Francisco, Calif.)	Capt., A.U.S.

*Deceased

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

- THE ABNORMAL PNEUMOENCEPHALOGRAPH—by *Leo M. Davidoff*, M.D., Director of Neurological Surgery, Beth Israel Hospital, New York City, Clinical Professor of Neurosurgery, New York University, Postgraduate Medical School; and *Bernard S. Epstein*, M.D., Associate Radiologist, The Jewish Hospital of Brooklyn, New York and Instructor in Clinical Radiology, Long Island College of Medicine. Lea and Febiger, Philadelphia, 1950. Price \$15.00.
- ARTHRITIS AND RELATED CONDITIONS—edited by *Theodore Franklin Bach*, M.D., F.A.C.P., Assistant Professor of Medicine in the Graduate School of Medicine of the University of Pennsylvania, Chief of Arthritic Clinic, Abington Memorial Hospital, Abington, Pa. F. A. Davis Co., Philadelphia, 1948. Price \$6.50.
- BLOOD AND PLASMA TRANSFUSIONS—by *Max M. Strumia*, M.D., Sc.D.(Med.), Associate Professor of Pathology, Graduate School of Medicine, University of Pennsylvania, Director, Laboratory of Clinical Pathology and of the John S. Sharpe Research Foundation, Bryn Mawr Hospital, Member, Subcommittee on Blood Substitutes of the National Research Council, 1940-1945; and *John J. McGraw, Jr.*, M.D., Instructor in Pathology, Graduate School of Medicine, University of Pennsylvania, Assistant Attending Pathologist, Bryn Mawr Hospital, Formerly Commanding Officer of the Blood Bank for the Mediterranean Theater of Operations, Chief of the Blood Research Division of the Army Medical School and Special Representative to the Surgeon General on Blood and Blood Plasma transfusions. F. A. Davis, Co., Philadelphia, 1949. Price \$7.50.
- BRONCHESOPHAGOGY—by *Chevalier Jackson*, M.D., Sc.D., LL.D., F.A.C.S., Honorary Professor of Bronchoesophagology and Laryngeal Surgery, Temple University, Philadelphia; and *Chevalier L. Jackson*, M.D., M.Sc., F.A.C.S., Professor of Bronchoesophagology and Laryngeal Surgery, Temple University, Philadelphia. W. B. Saunders Co., Philadelphia, 1950. Price \$12.50.
- THE DIAGNOSIS OF PANCREATIC DISEASE—by *Louis Bauman*, M.D., Formerly Assistant Professor of Clinical Medicine, Columbia University and Assistant Visiting Physician to the Presbyterian Hospital, New York. With a foreword by *Allen O. Whipple*, M.D. J. B. Lippincott Co., Philadelphia, 1949. Price \$5.00.
- THE EXCEPTIONAL CHILD IN INFANCY AND EARLY CHILDHOOD—Proceedings of the Annual Spring Conference on Education and Exceptional Child of the Child Research Clinic of the Woods Schools, Langhorne, Pa., May, 1950. No charge.
- HUMAN PATHOLOGY—by *Howard T. Karsner*, M.D., LL.D., Formerly Professor of Pathology, Western Reserve University, Medical Research Advisor to the Bureau of Medicine and Surgery, United States Navy. J. B. Lippincott Co., Philadelphia, 1950. Price \$12.00.
- PEDIATRIC X-RAY DIAGNOSIS—by *John Caffey*, A.B., M.D., Professor of Clinical Pediatrics, College of Physicians and Surgeons, Columbia University; Attending Pediatrician and Roentgenologist, Babies Hospital and Vanderbilt Clinic, New York City; Consulting Pediatrician, Grasslands Hospital, Westchester County, New York, and New Rochelle Hospital, New Rochelle, New York; Consulting Roentgenologist, Orange Memorial Hospital, Orange, New Jersey, Consultant in Pediatric Roentgenology, the New York Hospital, New York City. The Year Book Publishers, Inc., Chicago, 1950. Price \$22.50.
- REGIONAL ORTHOPEDIC SURGERY—by *Paul C. Colonna*, M.D., Professor of Orthopedic Surgery, University of Pennsylvania Medical School. The W. B. Saunders Co., Philadelphia, 1950. Price \$11.50.
- RENAL DISEASES—by *E. T. Bell*, M.D., Professor of Pathology in the University of Minnesota, Minneapolis, Minn. Lea and Febiger, Philadelphia, 1950. Price \$8.00.

BOOK REVIEWS

PRINCIPALS OF INTERNAL MEDICINE, edited by *T. H. Harrison*, M.D., with 48 contributing authors (The Blakiston Co., Philadelphia, \$12.00).

In recent years the trend has been to consider a disease from its physiological rather than its anatomic aspect. The symptoms or manifestations of a disease are considered to be expressions of the pathological physiology of the system or systems involved. This book does a remarkable job in this direction. These authors have attempted and have quite well accomplished the difficult task of considering disease entities in the light of the abnormal physiology, chemistry and psychology occasioned by the tissue or system involved.

This book is divided into seven sections written by men well known in their respective fields. The section on Cardiac Manifestation of Disease is especially well written and instructive. It is a fine book for all who desire to improve their clinical appraisal of their patients. The general practitioner will find it a handy reference, and the internist will find it a book that he will read and re-read.—*E. T. Scales, M.D.*

PROGRESS IN GYNECOLOGY, edited by *Joe V. Meigs*, M.D., and *Somers H. Sturgis*, M.D. (Grune and Stratton, Inc., New York, \$9.50).

The purpose of this book is to summarize the current trend in gynecology and obstetrics. The authors

have done this by having new investigators in the field write chapters on their fields which they have specifically investigated. Throughout the book, theories in practice have been correlated in such things as sterility problems, diagnostic tests for pregnancy and embryonic developments. One of the more important things this book does for the specialist is that it arouses his curiosity in his field and its various entities. No chapter is particularly long nor do either of the authors go into theory which has not particularly been proven, but they adhere to the practical application of theory through the practice of obstetrics and gynecology.

This book is recommended by the reviewer for the specialist only and it is especially of interest to any specialist who is "short on time" and wishes a review of the current trend.—*C. R. Montz, M.D.*

FREUD: DICTIONARY OF PSYCHOANALYSIS, edited by *Nandor Fodor* and *Frank Gaylor* (Philosophical Library, New York, \$3.75).

In a space of 206 pages the authors have compiled a glossary of the basic terms of psychoanalysis as defined and explained in the words of Dr. Sigmund Freud, founder of the school of psychoanalysts. These definitions and explanations have been taken verbatim from Freud's writings.

The editors have greatly simplified three problems of those interested in psychoanalysis. First, this book provides a convenient dictionary to facilitate understanding any writings in which psychoanalytical terminology and concepts are employed. Second, for those who are aware that popularized representations of Freud's ideas are often distorted, this volume provides Freud's unabridged opinions. Last, it aids those who are interested in differentiating Dr. Freud's ideas from those of his critics among psychoanalysts and others.

No doubt if Dr. Freud himself had elected to compile a glossary of terms of psychoanalysis he would have produced a volume easier for the neophyte to understand. That is, his comments would be confined to the term in question and with a minimum of complex terminology. Since he did not, the editors were obliged to extract comments made, in passing, from his many writings and select those felt to be the most relevant to the terms under consideration. This the editors have done admirably.—*W. W. Macy, M.D.*

ADVANCES IN SURGERY, edited by William DeWitt Andrus, M.D., Chairman (Interscience Publishers, Inc., New York, \$11.00).

As the title of this volume so aptly states, this work is a compendium of recent advances in surgery written by a group of outstanding contributors in their respective fields.

The subject material deals with such important subjects as pulmonary function studies in relation to chest surgery, advances in surgery of the esophagus, surgical treatment of hypertension, portal hypertension, surgery of congenital anomalies of the heart and great vessels, recent advances in the treatment of cranio-cerebral injuries, use of streptomycin in the treatment of surgical infections, advances in skin grafting, the pathology of tumors of the peripheral nerves, testis tumors and advances in the management of pancreaticoduodenal cancers.

The outstanding authorities that have contributed material on the above listed subjects have condensed a great deal of important information in approximately 600 pages. Attention is given to basic considerations of pathology and diagnosis and surgical technic is rather fully described. This volume should be a definite addition to the library of all surgeons and others interested in the subject material discussed.—*D. W. Coughlan, M.D.*

PATHOLOGIC PHYSIOLOGY: MECHANISM OF DISEASE, edited by William A. Sodeman, M.D. (W. B. Saunders Co., Philadelphia, \$11.50).

This book, the work of 27 outstanding men in their respective fields, under the editorship of Dr. Sodeman, is one of the few texts of its kind to appear. It is arranged in regional fashion so that first the normal physiological mechanisms are described, followed by a detailed discussion of the alterations which occur in diseased states.

The physiological approach to the mechanism of disease is one which is becoming more and more important to those engaged in care of the sick. This text attempts to explain the how and why of disease rather than the what and where. In this attempt it is most successful, and it represents a veritable gold mine of information, both factual and correlative. It represents

a must for all those who would attempt to keep abreast of modern trends in medicine.—*W. Rindskopf, M.D.*

PRINCIPLES AND PRACTICE OF SURGERY, by Jacob K. Ber-man, M.D. (C. V. Mosby Co., St. Louis, \$15.00).

As the title indicates, this work is a complete textbook dealing with all the phases of general surgery. The various chapters outline first basic principles and later the surgical diseases of the various systems of the body.

The photomicrographs illustrating the pathology appearing in the various surgical conditions discussed are particularly good and contribute a great deal to the effectiveness of this text. The chapter devoted to diseases of the alimentary system is complete and exhaustive. All other systems are covered. The illustrations are numerous and consist of diagrams of various standard operations, photomicrographs and many x-ray reproductions.

This textbook on general surgery is recommended as a good, basic general volume on that subject.—*D. W. Coughlan, M.D.*

HUMAN FERTILITY AND PROBLEMS OF THE MALE, by Edmond J. Farris, Ph.D. (Author's Press, Inc., White Plains, N. Y., \$5.00).

The author, who has long been interested in human fertility problems, states that his research work has been carried out with two long range objectives in mind. The first goal has been the development of practical methods for aiding involuntarily childless couples. He feels that the technics and measuring devices which he has established for determining the time of ovulation in the female and the index of potential fertility in the male have aided in good measure in attaining this objective. The second goal is the establishment of a body of knowledge about fertility which will be of aid to research workers in both the natural and the social sciences. Although publication of this volume would seem to be a step toward attainment of this objective, the author emphasizes that work in the field of human fertility has barely begun.

The book incorporates a considerable amount of information which should be of value to those who deal with fertility problems.—*R. F. Birge, M.D.*

PRACTICAL GYNECOLOGY, by Walter J. Reich, M.D., and Mitchell J. Nechtow, M.D. (J. P. Lippincott Co., Philadelphia, \$10.00).

This book incorporates the most recent advances in gynecology with emphasis on subjects of recognized importance. It is an excellent review for the gynecologist and especially for the time-pressed general practitioner who could almost discard all others except for reference and concentrate on this one concise work.

Lengthy discussions of theory are omitted. What is known to be of value in actual practice is used and in a well organized, convenient form for finding. The section on sterility is one of the most useful guides to the investigation of this problem that I have seen, being concise, clear and practical. Other sections are equally good, as those on examination and diagnosis, which emphasize cancer detection; the section on technics and apparatus and that on the premarital examination and counsel are also found to be of interest.—*F. O. Woodard, M.D.*

SOCIETY PROCEEDINGS

MEETINGS

Black Hawk

The regular meeting of the Black Hawk County Medical Society was held November 28 at the Hotel Russell-Lamson in Waterloo. Dr. Lester W. Paul of Madison, Wisc., spoke on "Roentgenologic Diagnosis of Gastrointestinal Disease."

Butler

The Butler County Medical Society recently elected the following officers for 1951: president, Dr. Melchior D. Enna, Dumont; vice-president, Dr. Hugh G. MacLeod, Greene and secretary-treasurer, Dr. Frank F. McKean of Allison.

Cerro Gordo

The Cerro Gordo County Medical Society met November 14 at the Hotel Hanford in Mason City. Dr. Donald E. Cassels of Chicago spoke on "Problems Presented by Congenital Heart Disease."

Greene

Members of the Greene County Medical Society and their wives held a dinner meeting November 16 at the Gem Tea Room in Jefferson. The following officers were elected for 1951: president, Dr. Marion H. Brinker, Jefferson; vice-president, Dr. Lawrence C. Hanson, Jefferson and treasurer, Dr. Elvin D. Thompson, Jefferson.

Iowa Academy of General Practice

The Iowa Academy of General Practice and the SUI College of Medicine will jointly sponsor a post-graduate course January 25 at the Hotel Savery in Des Moines. The course will include lectures on obstetrics, gynecology and cardiology.

Johnson

The Johnson County Medical Society met December 6 at Hotel Jefferson in Iowa City for its annual business meeting. Arthur O. Leff, of the SUI College of Law, spoke on "Expert Testimony."

Lee

The Lee County Medical Society met December 13 at the Country Club in Fort Madison. Dr. Rubin H. Flocks of the SUI College of Medicine, spoke on "Carcinoma of the Prostate." Dr. Robert L. Jackson, also of Iowa City, discussed "Degenerative

Changes in Young Diabetics in Relation to Level of Control."

Marshall

Dr. Edwin J. Marble of Marshalltown was elected president of the Marshall County Medical Society at the annual business meeting December 5 at Hotel Tallcorn. Other officers for 1951 are: vice-president, Dr. Rodney C. Wells, Marshalltown and secretary-treasurer, Dr. Earl L. Keyser, Marshalltown.

Polk

The Polk County Medical Society will have its annual meeting and election of officers January 17 at the Hotel Savery in Des Moines. Dr. Stanley W. Olson, Dean of the University of Illinois College of Medicine, will be the guest speaker.

Washington

Dr. Eugene F. Van Epps of the SUI College of Medicine spoke on "The Use of the X-Ray in Pediatrics" at the November 30 meeting of the Washington County Medical Society in Washington.

Wright

The Wright County Medical Society held its regular meeting December 12 at the New Home Cafe in Clarion. Dr. Kenneth R. Cross of the Des Moines Veterans Administration Hospital spoke on "Early Malignancies of Squamous Epithelium; Their Pathogenesis and Diagnosis."

PERSONALS

Dr. Morris G. Beddoes, formerly of Oelwein, has begun the practice of medicine in Waterloo. Dr. Beddoes will specialize exclusively in anesthesiology.

Dr. Granville A. Bennett, professor of pathology at the University of Illinois College of Medicine, addressed the Medical Forum, November 20 in Des Moines on "Pathology of Arthritis."

Dr. Walter L. Bierring of Des Moines has been awarded the Arthur Thomas McCormack Award for 25 years of meritorious service in public health. This award was made by the Association of State and Territorial Health Officers.

Dr. Ward R. Dunseth has begun the practice of

medicine in Kellogg. A graduate of the SUI College of Medicine, he interned at the Kansas City General Hospital where he took special training in anesthesia.

Dr. Francis D. Donahue, formerly of Omaha, Nebr., has become associated with **Dr. William I. Evans** in Sac City. A 1943 graduate of Creighton University College of Medicine in Omaha, Dr. Donahue has been in surgical residencies in Cincinnati, Ohio and New Orleans, La., for the past three years.

Dr. Eugene B. Floersch of Council Bluffs spoke on "Socialized Medicine" November 28 at the Kiwanis meeting in Clarinda.

Dr. Atlee B. Hendricks, formerly of Iowa City, has begun the practice of internal medicine in Davenport.

Dr. Lee F. Hill of Des Moines spoke on "Behavior Problems in Children" at the pediatrics section of the clinical session of the AMA in Cleveland, December 5.

Dr. John T. McCoy, formerly of Texarkana, Ark., recently began the practice of medicine in Cedar Falls. He is specializing in diagnosis and internal medicine. A 1944 graduate of the SUI College of Medicine, he interned at the Sacred Heart Hospital in Spokane, Wash.

Dr. Ralph R. Simmons of Des Moines, medical director of the Equitable Life Insurance Company of Iowa, has been elected to the council of the Association of Life Insurance Medical Directors of America.

Dr. Fred Sternagel of West Des Moines spoke on a panel discussion of "Activities With a Purpose" at the Third National Medical Public Relations Conference in Cleveland, December 4.

Dr. Henry B. Stryker, Jr., formerly of White River Junction, Vt., has become affiliated with Medical Associates in Dubuque. He will specialize in internal medicine. Dr. Stryker was graduated from Columbia University College of Physicians and Surgeons, New York, in 1944.

MARRIAGE ANNOUNCEMENT

Miss Jane Colleen Dennis, daughter of Mrs. Olivette Dennis of Red Oak and **Dr. Joseph M. White, Jr.**, of Iowa City, son of Mr. and Mrs. Joseph M. White, Sr., of Dallas, Texas, were married November 26 in Red Oak.

DEATH NOTICES

Dr. Cornelius Nanko Bos, 74, died at his home in Oskaloosa November 24. A 1904 graduate of the Northwestern University Medical School, Chicago, he practiced in Oskaloosa 20 years. He was a former member of the Mahaska County and Iowa State Medical Societies.

Dr. Clarence Percy Cook, 78, Des Moines eye, ear, nose and throat specialist, died November 20 following a heart attack. He was a 1901 graduate of the College of Physicians and Surgeons, Keokuk. Dr. Cook was a member of the Polk County and Iowa State Medical Societies.

Dr. Benjamin Ernest Eversmeyer, 75, who had practiced medicine in Muscatine for 45 years, died at his home November 27. Born in Muscatine, Dr. Eversmeyer was graduated from the University of Illinois College of Medicine, Chicago, in 1905. He was a member of the Muscatine County and Iowa State Medical Societies.

Dr. James Orval Ganoe, 85, who had practiced medicine in Odgen for more than 50 years, died November 13 at the Boone County Hospital. He was a 1897 graduate of the University of Nebraska College of Medicine, Omaha. Dr. Ganoe was a member of the Boone County and Iowa State Medical Societies.

Dr. John F. Harp, 92, Prairie City physician for 50 years preceding his retirement 12 years ago, died November 17 in Newton. He was a 1884 graduate of the State University of Iowa College of Medicine. Dr. Harp was a life member of the Jasper County and Iowa State Medical Societies.

Dr. J. Jay McCarl, 70, former Sac City physician, died at his home in Sac City November 28. A 1907 graduate of Creighton University College of Medicine in Omaha, he practiced medicine in Sac City for 31 years. He was a member of the Sac County and Iowa State Medical Societies.

Dr. Earl Edward Morgan, 57, Sioux City physician for more than 30 years, died November 18 after suffering a heart attack in Iowa City. He was a 1920 graduate of the State University of Iowa College of Medicine. Dr. Morgan was a member of the Woodbury County and Iowa State Medical Societies.

Dr. Fred B. Morgan, 76, died November 28 in a Clinton hospital. He was a 1898 graduate of the University of Illinois College of Medicine, Chicago. Dr. Morgan was a life member of the Clinton County and Iowa State Medical Societies.

The JOURNAL

of the

Iowa State Medical Society

Vol. XLI

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PRIMARY CANCER OF THE LUNG

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PRIMARY CANCER of the lung is not a rare condition nor is it one that concerns only the specialist in chest diagnosis or chest surgery. It occurs in the practice of almost every physician at some time or another but because of the multiplicity of its manifestations frequently passes unrecognized. As a clinical masquerader it has no equal. In many cases it will go on to a fatal termination, improperly diagnosed with the true nature of the condition unsuspected.

Primary bronchiogenic carcinoma occurs in at least one per cent of all post mortem examinations and constitutes from 12 to 15 per cent of all carcinoma, being of approximately the same order of frequency as carcinoma of the rectum and carcinoma of the uterus although recognized less frequently. There are figures available which apparently show that the condition may be increasing in frequency more rapidly than the increasing average age of the population and general increase in carcinoma would seem to warrant. Better understanding of the clinical picture of the disease by physicians in general has led to more frequent and more accurate clinical diagnosis of the condition.

ETIOLOGY

Many attempts have been made to correlate the appearance of primary bronchiogenic carcinoma and its increase with certain extraneous factors but to date, with one exception, such attempts have been unsuccessful. The history of exposure to road oils, tars and automobile exhaust gases has not been consistent for the condition occurs in patients who have had absolutely no exposure to any of these irritants, nor has there been excessive incidence of this disease to individuals intensively exposed to them. More recently, statistical evidence has been presented which would seem to indite tobacco smoking as a possible etiological factor. The condition is seen, however, in individuals who have never smoked and in others

who have not smoked for many years. The relative predominance of the condition among males, four to one, has apparently not been upset by the marked increase in smoking by women in recent years. The one consistent exception in discussing possible irritants as factors in the development of primary bronchiogenic carcinoma has been the excessive incidence of this tumor among the miners in Czechoslovakia exposed to radioactive ores containing arsenic. The increasing average age of our population, placing more individuals in the carcinoma years, should produce an increase in this tumor as well as in other types of carcinoma. This tumor may develop at any age, even in small infants.

Primary carcinoma of the lung develops as a malignant process in the wall of one of the bronchi, hence the accepted name, primary bronchiogenic carcinoma. It may begin in one of the smaller peripheral bronchi but is more commonly seen and recognized in the larger radicles. Microscopically it may present as a differentiated glandular type of structure, adenocarcinoma, as a definite epithelial structure, squamous cell carcinoma or more commonly as a rapidly growing undifferentiated mass of cells now commonly called an undifferentiated type of carcinoma but formerly called an oat cell tumor or a sarcoma of the lung. The process may develop rather slowly depending upon the type and degree of differentiation of the tumor, but commonly it is malignant and develops quite rapidly. We have seen a few instances, however, in which the growth and development of the tumor has been extremely slow. The degree of differentiation may vary widely throughout the tumor mass. The behavior of a given tumor and the patient's prognosis are probably more closely related to the worst parts of the tumor than to the more differentiated portions, and great care must be exercised in basing a prognosis on information obtained from a small biopsy specimen.

PROGRESS

Primary bronchiogenic carcinoma is usually a malignant type of tumor which grows rapidly and metastasizes early and widely. The local tumor frequently invades the submucosal lymphatics of

the involved bronchus at an early date and spreads along them for a considerable distance proximally with no evidence of the involvement except possibly for some rigidity of the invaded structures. The regional lymph nodes become invaded rather early, frequently enlarging considerably and often producing symptoms far more prominent and distressing than those produced by the original tumor. The liver is frequently invaded early and in it the metastatic lesion may grow to a large size, all out of proportion of the primary tumor and giving rise to the suspicion that the primary tumor is in the abdomen rather than in the chest. Widespread general metastases are frequently seen with invasion of the brain, osseous system, adrenal, kidney, pancreas, thyroid, cardiac muscles, skin and almost any other structure in the body. All of these metastases may occur from a primary bronchiogenic tumor so small that it is overlooked on the ordinary x-ray films or may even be difficult to demonstrate at post mortem examination.

The neurological surgeons have for many years feared the metastasizing properties of this tumor so much that routine x-ray films of the chest have been considered mandatory before exploration of any cerebral tumor. Metastatic deposits in kidney, pancreas, adrenals and thyroid have not infrequently been mistaken for primary tumors of these organs. With such a variety of lesions from a thoracic primary, it is no wonder that the clinical picture presented may be extremely bizarre.

DIFFICULTIES IN DIAGNOSIS

Not even syphilis with all of its complicated clinical manifestations can present a more complicated clinical picture or masquerade more efficiently than primary bronchiogenic carcinoma. This tumor can simulate the clinical picture of pneumonia, virus pneumonia, foreign body obstruction, unresolved pneumonia, atelectasis, lung abscess, bronchiectasis, pulmonary tuberculosis, empyema or metastatic tumor and many of them may be associated with it. Only the most careful clinical study can reveal the true nature of the process under such circumstances.

One of the most difficult problems in differential diagnosis lies in the upper lobe lesion with some atelectasis in an area where both tuberculosis and carcinoma commonly occur. Cough, expectoration, fever, wheezing, atelectasis, blood streaked sputum, chest tightness, pleurisy, weight loss and anemia may occur with either lesion. The finding of tubercle bacilli in the sputum would, of course, seem to settle the diagnosis, but we have seen both lesions together and not infrequently in pulmonary tuberculosis with atelectasis the sputum may be negative for acid fast organisms because of the bronchial obstruction.

The presence of cavitation within such an apical lesion might theoretically increase the suspicion of tuberculosis, yet it may be present in lung abscess or bronchiectasis which may occur distal to the obstruction of bronchiogenic carcinoma. Broncho-

scopic examination, which in other areas is of extreme value, may give little information in this area unless right angle or retrograde telescopes are used; otherwise, only the orifice of the upper lobe bronchus can be visualized. It may be impossible to obtain a good biopsy specimen in this region although the aspiration of material from this area with a curved aspirating tube may furnish material suitable for cytological studies. The finding of tubercle bacilli in such material does not necessarily rule out the possibility of a coexisting carcinoma, nor is it safe to wait six or eight weeks for acid fast cultures or guinea pig inoculations to rule out tuberculosis, for bronchiogenic carcinoma grown and spreads too rapidly to justify such a delay.

The x-ray picture of primary bronchiogenic carcinoma is frequently misdiagnosed as pneumonia until the process fails to clear. A diagnostic hazard of even greater degree may lie with the diagnosis of primary atypical pneumonia or virus pneumonia now so commonly made for here even greater delays in reaching the correct diagnosis are seen because of a known tendency of this condition to clear slowly. The occurrence of pulmonary suppuration does not rule out bronchiogenic carcinoma for it may occur distal to the obstructing tumor. It is now generally recognized that approximately ten per cent of chronic lung abscess in older people occur in or distal to an obstructing bronchiogenic carcinoma. A lung abscess of insidious onset in an older individual is quite likely the result of a carcinoma.

Bronchiogenic carcinoma may extend peripherally and lead to massive pleural involvement sometimes simulating a primary endothelioma (mesothelioma) of the pleura and may give rise to clear or bloody pleural effusion in which malignant cells may or may not readily be demonstrated. Under such circumstances, the differential diagnosis between a tuberculous and a malignant pleural effusion is not simple. The presence of frank pus in the pleural cavity does not rule out the possibility of carcinoma, as empyema may readily develop from a pulmonary suppuration distal to an obstructing carcinoma. Special studies for acid fast organisms by smear and culture and guinea pig inoculation should always be made from any suspected pleural effusion. The dangers of delay in awaiting such reports are not present under these circumstances as in this condition the presence of the pleural fluid frequently represents a metastatic lesion and an incurable stage of the disease. The recognition of tumor cells by direct examination or in blocked sediment from pleural fluid is a valuable diagnostic aid but unless the pathologist has had considerable experience in such studies, it may lead to errors in both directions.

METASTATIC LESIONS

Metastatic tumors from other sites to the lung occur commonly. At times some of these may produce a clinical picture which closely simulates that

of primary bronchiogenic carcinoma if the metastases happen to occur in the bronchial wall and produce bronchial obstruction. We have personally seen and by bronchoscopic biopsy recognized metastatic lesions to the bronchus from carcinoma of the kidney, colon, breast and testicle as well as from Hodgkin's disease. These have produced bronchial obstruction and a clinical picture identical with and indistinguishable from primary bronchiogenic carcinoma.

CLINICAL COURSE

Primary cancer of the lung apparently begins as an isolated neoplastic nodule in the wall of the bronchus, small, medium or large in size, frequently one of the latter. As the mass develops, it encroaches upon the lumen of the bronchus interfering with the passage of air, producing local irritation and secretion and resulting in slight cough at first dry but later associated with a small amount of clear mucoid sputum. As ulceration occurs or with severe coughing, blood streaks or a small amount of pure blood may be expectorated with the mucous. At first the obstruction is only partial permitting air to enter but not to escape during the respiratory cycle, giving rise to a localized obstructive emphysema in the area blocked by the tumor. If small, this gives rise to no clinical findings but if large, it may give rise to a sense of tightness in the chest and may, on physical examination, produce an area of hyper-resonant percussion note with distant to absent breath sounds and no rales. This may be visualized on the x-ray films as a localized area of increased translucency especially noticeable if the films are taken in complete expiration.

As the obstruction in the involved area becomes more complete, air can neither enter nor leave the involved area. The oxygen becomes absorbed distal to the obstruction, producing an atelectasis of the involved portion of the lung. If this involves only a lobule of the lung, it cannot be recognized by physical examination but if a goodly portion of the lobe is involved, the physical signs of atelectasis are evident. Clinically the patient at this time may notice slight dyspnoea and tightness or pulling in the chest often mistaken for pleurisy. X-ray films of the chest at this time may show the atelectatic area and the displacement of adjacent structures secondary to it, but if it is small or situated in the left lower lobe behind the heart, it may not be evident even on careful study, and there may be no displacement of adjacent structures.

SYMPTOMS

By the time these changes have occurred, the patient may have noticed a slight wheeze, squeak or clicking sensation in the chest, particularly after a cough, upon exertion or upon taking a deep breath. He may or may not have noticed a sense of fatigue or loss of strength, slight anemia or some other mild toxic symptoms. Not infrequently by

this time the patient, if a smoker, will have changed his brand of cigarettes, cut down the number smoked, or resorted to some filtration device, blaming the smoking for all of his trouble and thereby wasting valuable time in arriving at a diagnosis. The non-smoker who has developed such symptoms will usually recognize that something is wrong and is more likely to report for examination at an earlier stage not wasting valuable weeks in a fruitless search for a non-irritating cigarette. As the tumor increases in size, there is frequently increasing cough, expectoration of non-purulent sputum at times blood streaked, occasionally some pleural discomfort, sense of breathlessness even without exertion and some tightness in the chest and difficulty in taking a deep breath. Fever in varying degree may or may not be present depending upon secondary infection. If secondary infection develops in the lung distal to the obstruction, the patient may go through an episode resembling a pneumonia, and the sputum may take on a character produced by pneumonia or bronchiectasis or may even become foul as an abscess develops. Ulceration of the local tumor mass may produce bleeding, frequently not large in amount though occasionally profuse hemorrhage results. If pleural involvement occurs, pleural effusion may develop following an acute episode of pleurisy and dyspnoea results from the pleural fluid accumulation.

The course of the condition from its inception to this stage may be a matter of days, weeks or even months, depending upon the nature of the tumor, the rapidity of its growth and the mechanical factors present. The patient by this time may have sought medical advice and may have received symptomatic treatment and a variety of diagnoses with or without improvement. The possibility of bronchiogenic carcinoma may have been considered by this time but not infrequently it is not considered until a late stage of the disease is reached. As the disease progresses, all symptoms may increase though occasionally with local sloughing of the tumor mass in the bronchus; bronchial patency may again be re-established with temporary improvement in symptoms. A whole train of symptoms from secondary involvement of other structures may now enter the picture such as: chest pain from direct involvement of the pleura, chest wall or ribs; dyspnoea from involvement of the bronchial nodes, from tracheal compression or from pleural effusion; dysphagia from compression of the esophagus by enlarged mediastinal lymph nodes; breathlessness from diaphragmatic paralysis from invasion of the phrenic nerve in the mediastinum; shoulder girdle pain, atrophy of the muscles of the shoulder girdle from direct involvement of the upper ribs, vertebral bodies or brachial plexus from an apical carcinoma; eye symptoms of a Horner's syndrome produced by interruption of the upper sympathetic nerve trunk; headaches, nausea and vomiting from cerebral metastasis, backache or abdominal pain from involvement of the retroperitoneal nodes or liver or vertebral

bodies and local symptoms due to metastatic involvement of any local tissue.

SECONDARY INFECTION

The development of secondary infection within the lung distal to the obstruction may change the entire picture from one of local tumor to one of pulmonary suppuration and can lead to serious errors in diagnosis and treatment. Empyema, lung abscess, bronchiectasis and pneumonia may be a few of the diagnoses under which the carcinoma now masquerades. Many patients die from secondary complications with the primary source of the trouble undiagnosed and unsuspected. From the diagnostic standpoint, these conditions are of interest and should be recognized, but from the therapeutic standpoint, they all develop because of spread of the disease from the local original site and frequently are an indication that the disease has already spread beyond the stage where a clinical cure may be impossible. It is a tragic but true fact that nearly three quarters of the patients we see suffering from bronchiogenic carcinoma already present disease which is so far advanced that there is no possible chance of cure. Our clinical goal must be earlier diagnosis if we are to offer anything more than slight palliation to many of these unfortunate patients.

DIAGNOSIS

Probably the most important single factor in arriving at an early diagnosis of primary bronchiogenic carcinoma lies in keeping the possibility of bronchiogenic carcinoma ever in the forefront of our mind when confronted with any chest condition. It is most frequently overlooked because it is not considered in the differential diagnosis of all pulmonary disease. In general, a patient over the age of 40, particularly a male, who develops an unexplained persistent cough with expectoration, blood spitting, wheezing, breathlessness, tightness in the chest, pleurisy or pleurisy with effusion, asthma, chronic bronchitis or any other indefinite lung condition should be suspected of harboring a pulmonary malignancy. We must also add to this group all patients presenting an unresolved or slowly resolving pneumonia, localized emphysema or atelectasis and all others presenting peculiar or unusual shadows on the x-ray film. A good chest roentgenograph should be a part of any good chest examination and must be made routinely for any patient who has a chest complaint.

Sputum studies for acid fast bacilli must be made routinely with material submitted for culture as a more accurate check. Other diagnostic procedures should not be discontinued at this point awaiting the result of culture or guinea pig inoculation as valuable time may be lost. The sputum should be carefully studied for malignant cells, and any particles which resemble tissue should be isolated, imbedded and stained for microscopic examination for tumor cells by an experienced pathologist. It is our experience that these studies have less value

than direct examination of biopsy material or secretions aspirated directly from the suspected site. It is well to remember that negative findings do not rule out the presence of tumor.

COMPLETE PHYSICAL EXAMINATION

A complete physical examination is an essential part of the proper study of any patient suspected of harboring a pulmonary malignancy. It is a mistake to center all attention upon the chest because the rest of the physical examination may not only be a great aid in establishing the diagnosis but may tell much about the prognosis at the same time. Metastases in primary bronchiogenic carcinoma are a frequent occurrence, and special search must be made in all organs which may harbor them. A small nodule in the skin, a constricted pupil, a small axillary or cervical lymph node, a nodule in the liver or an elevated or paralyzed hemidiaphragm may not only confirm the diagnosis of primary bronchial malignancy but also establish proof that it has already metastasized and the condition is hopeless.

X-ray examinations of the chest are extremely important. If the classical posterior-anterior and lateral films do not reveal the desired information, special technics involving oblique or lordotic views, or inspiration and expiration films may give additional information. Overexposed films using a bone technic may also be of value while planigrams or stratograms may conclusively demonstrate a bronchial obstruction not otherwise demonstrable. Bronchograms after the instillation of iodized oil may also be extremely valuable.

BRONCHOSCOPIC EXAMINATION

No clinical study of a patient suspected of having a primary bronchiogenic carcinoma is complete without a thorough bronchoscopic examination in an attempt to visualize the obstructing tumor and to obtain material for biopsy or special cell study. As all secondary bronchial orifices, particularly those of the upper lobe, cannot be well visualized through a direct-vision bronchoscope, the use of a supplementary lens system for oblique or retrograde study adds greatly to the value of the examination and has become a must in bronchoscopy. The use of special curved aspirating tips for the collection of material from certain bronchial orifices for bacteriological and microscopic study has added greatly to the value of the examination. Direct biopsy of suspected tissue should be obtained if possible. Diagnostic pneumothorax may occasionally be of value in bringing a distorted bronchus into better view bronchoscopically. Pleuroscopy after the establishment of the pneumothorax may reveal evidence of pleural involvement and inoperability and thus save the patient unnecessary exploratory thoracotomy.

The study of aspirated bronchial secretions of freshly expectorated sputum or of pleural fluid for malignant cells by the use of Papanicolaou or hematoxylin and eosin stains is a valuable addi-

tion to our previous laboratory methods for confirming the diagnosis of suspected primary bronchiogenic malignancy. It is not, however, as simple as some would have you believe. It requires the services of an expert cellular pathologist experienced in the use of this special technic, and even then inaccurate reports are made occasionally. Its routine use and careful evaluation has been of great value particularly in the diagnosis of lesions beyond the reach of the ordinary bronchoscope and bronchoscopic biopsy forceps.

In spite of all of our careful studies and laboratory aids, there are still a number of patients in whom the diagnosis of primary bronchiogenic carcinoma cannot be established nor excluded even after the most painstaking study. To wait two or three months until the condition has progressed so that a diagnosis can be made may mean the loss of all possible chance of cure. Exploratory thoracotomy in these patients becomes a valuable diagnostic as well as therapeutic procedure. Even with the chest open, it may be absolutely impossible to accurately tell whether carcinoma is present or not. Surgical resection of the involved area and immediate careful pathological study may be the only means of establishing the presence or absence of carcinoma. Local resection of an isolated tuberculous or non-tuberculous inflammatory lesion may be of distinct benefit to the patient and carcinoma is encountered in these isolated lesions with sufficient frequency to amply justify the risk entailed by such an exploratory operation. This may be the only way in which an early diagnosis and satisfactory treatment can be afforded to a patient at an early stage of the malignant process.

TREATMENT

Once the diagnosis of a primary bronchiogenic carcinoma has been made, an extra thorough search must be made all over the body for possible metastatic lesions for they occur frequently and are easily overlooked. Any suspicious lymph nodes should be biopsied and examined carefully for carcinomatous metastasis. The liver deserves careful study as it is frequently involved by metastatic carcinoma from the lung. If direct palpation does not reveal any nodules, additional information may be obtained by the establishment of pneumoperitoneum followed by careful x-ray studies of the liver region or peritoneoscopy for better visualization of the surface of the liver. Because of the malignant nature of the condition and the rapid progress of the disease, one can expect little by palliative procedures if known metastases are found.

The fundamental basis of treatment for primary bronchiogenic carcinoma is the same as that for carcinoma of other portions of the body, namely, early diagnosis and early and complete eradication of the tumor bearing organ and its regional lymphatics before the disease has spread from its local site. Radiation therapy has been of palliative but not curative value. Total pneumonec-

tomy with removal of the regional lymph nodes has become the standardized procedure of choice in all patients who are suitable for radical treatment. It is to be recommended to all patients who are suitable physically for the extensive procedure involved. It means that the patient must be in fair general condition and have a good cardiovascular system necessary to withstand the radical surgery contemplated. Even when all preliminary precautions are taken, approximately ten per cent of patients subjected to total pneumonectomy for bronchiogenic carcinoma develop auricular fibrillation following surgery. Older individuals, that is those beyond the age of 65 or so depending on physiological age, do not as a rule tolerate radical pulmonary resection well. For this group of patients, a somewhat less radical procedure such as lobectomy may at times be justifiable to relieve local conditions without perhaps as good a percentage chance of long time results. Lobectomy in general, however, should be considered as an incomplete operation for carcinoma of the lung. We use it for certain localized lesions in older individuals and those with a limited vital capacity but we cannot feel that it is the ideal procedure. As a palliative procedure, it may relieve the individual of profuse or repeated pulmonary hemorrhage and other symptoms of pulmonary suppuration and, at times, may produce good results of long duration.

CRITERIA OF OPERABILITY

Once the diagnosis of primary bronchiogenic carcinoma has been established, the whole situation must be reviewed in the light of possible radical resection in an attempt to cure the condition. Unfortunately, even as yet nearly three quarters of the patients that we see are already too far advanced to present any possible hope of cure even by the most radical surgery. In reviewing the situation as to the possibility of surgical treatment of this condition, the following criteria of operability has been used somewhat as a general guide:

1. Absence of metastases, both local and distant.
2. Absence of nerve or bone involvement, particularly in the phrenic, recurrent laryngeal or the sympathetic nerve trunks, or the ribs or spine adjacent to the tumor.
3. Absence of pleural effusion even if carcinoma cells cannot be demonstrated in the fluid.
4. Absence of rigidity or involvement of the trachea or proximal one centimeter of the main bronchus on the affected side.
5. Absence of cardiac, renal or other serious constitutional disease.
6. The patient's general physique must be sufficiently robust to offer a reasonable chance of withstanding the radical surgery necessary.
7. The patient's age group and life expectancy from other standpoints must be such as to justify the radical surgery contemplated.

If these conditions can be met, the whole situ-

ation is discussed frankly with the patient and his relatives, and the recommendation of exploratory thoracotomy made in the hope of resection leaving, however, the alternatives of radiation therapy or some of the injection methods available if the patient decides against surgery or if conditions at operation are found unsuitable for resection. This recommendation is made so as not to destroy the patient's hope of possible result and to leave the way open for possible alternative methods of treatment in case exploratory thoracotomy reveals conditions unfavorable for resection; a circumstance which is encountered in nearly half of the patients explored.

The treatment of primary bronchiogenic carcinoma involves close team work between the general practitioner, the internist, the roentgenologist, the bronchoscopist, the pathologist and the thoracic surgeon. From the diagnostic standpoint if all save one of this group must be eliminated, then the general practitioner should be the one left to carry the torch for he is the one who is most likely to see the patient earliest. The other individuals may be necessary in order to prove or establish the diagnosis of primary bronchiogenic carcinoma or to treat it, but his first suspicion of the possibility of such a condition may be the most valuable contribution in establishing an early diagnosis. The earliest cases of primary bronchiogenic carcinoma which I have seen have come from general men who have had the keen insight to become suspicious of an early lesion and the courage of their conviction in referring the patient for further diagnosis and treatment. Not infrequently valuable time is lost by not placing the cards squarely on the table and explaining the situation to the patient in plain language. Where carcinoma of the lung is concerned, there is no time to be lost, no place for pussy-footing, soft words or for trying to save the patient's feelings. A "spot on the lung," a "shadow," "a little thickening," a "little inflammation," are nice terms designed to make the patient feel better and to allay his suspicions, but they also lead to fatal procrastination where carcinoma is concerned. Most of the patients that I see want to know what is going on and appreciate being told the truth. The physician can be truthful without being brutal and must learn to "pad the bricks with which you have to hit them."

The results from the surgical treatment of primary bronchiogenic carcinoma, while by far the best of any method available, are far from ideal. This tumor is a malignant one with a marked tendency to metastasize early and widely. The condition is usually not seen early, the patient already having advanced disease when first examined. Not infrequently the first symptoms which first come to the patient's attention are those from metastatic implants. Surgical results to date are somewhat similar to those encountered in the surgical treatment of carcinoma of the stomach, namely, approximately eight to ten per cent of patients subjected to surgical resection are living and ap-

parently free from disease at the end of five years. I have one patient who is now apparently free of all disease over 13 years since his total pneumonectomy for primary bronchiogenic carcinoma and others who are living three to five years or more. Some patients succumbing subsequently to metastatic lesions have been afforded a considerable number of months' relief from distressing local symptoms by pulmonary resection, some by pneumonectomy and some by lobectomy. The relief offered to some of these would seem to amply justify some palliative procedures. The value of palliative resections in so many, however, would seem to be problematical because of the rapidity with which metastatic lesions progress. Our hope for improved results most certainly lies in earlier recognition and earlier radical treatment.

Intentional palliative treatment for primary bronchiogenic carcinoma, while not ideal, is something with which we must all be concerned for many of the patients who present themselves fall into the group for whom nothing else may be done. X-ray therapy does offer certain hope of relief in certain individuals. However, it must be recognized that it is not curative and that the intensive radiation necessary to reduce the progress of certain primary bronchiogenic lesions even temporarily upsets the patient considerably making him quite ill and in general "takes considerable out of him." For this reason, we do not use intensive radiation therapy as a routine measure in primary bronchiogenic carcinoma but rather reserve it for special indications where it may be expected to give temporary relief; such conditions as mediastinal vascular obstruction from secondary metastatic lymph nodes, severe chest pain from direct involvement of the chest wall and for rapidly forming pleural effusions without too much other involvement. For these patients it may be worth while on a temporary basis. The use of such injections as nitrogen mustard and "teropterin" must be considered as entirely palliative and, in our experience, have not materially altered the course of the disease. There is, however, a certain psychological effect with the injection of some of these substances which may aid the patient temporarily from the psychic standpoint and as such is amply justifiable. Certain patients suffering from bone involvement may be temporarily benefited by chordotomy or rhizotomy and it is possible that certain patients with this condition of a hopeless nature may be benefited by a prefrontal lobotomy to render their remaining days or months less distressing.

Primary bronchiogenic carcinoma is a serious lesion of fairly common occurrence and serious prognostic import. It should be the concern of every medical man who must be ever on the lookout for it. Our only hope of successful treatment lies in early recognition and prompt radical surgical treatment.

ACUTE SMALL BOWEL OBSTRUCTION

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MANY classifications of small bowel obstruction have been suggested. For our purpose we will recognize only two main divisions, paralytic and mechanical. In the paralytic variety, the bowel is unable to pass on its contents due to absence of its motility and propulsive power, and the obstruction is as effective as if the lumen were occluded mechanically. Stanbro¹ points out that paralytic or functional ileus occurs in a mild degree following any abdominal operation. The most common cause of severe small bowel paralysis is a diffuse or localized acute inflammatory process. It is also seen in intraperitoneal hemorrhage, torsion of the omentum, mesenteric thrombosis or embolism, twisted ovarian cyst, blunt trauma to the abdominal wall, back injuries, fractures of the pelvis, distended urinary bladder and various heart and chest conditions. The mechanical type is due to a large number of causes and it is with this type we will primarily interest ourselves.

To adequately understand and intelligently treat intestinal obstruction, it is essential to be familiar with the function of the small bowel in health and the changes that occur in these functions when obstruction develops. The small intestine is essentially a muscular tube which transports the food mass and added digestive enzymes, which will be mentioned later, from the stomach to the large bowel. During this transportation effort, digestion occurs, absorption and secretion takes place and finally the unabsorbed matter finds its way to the rectum for expulsion.

The motor function of the small bowel is felt to occur in three ways.² There are segmental contractions which manipulate the food mass in a mixing-like process, the digestive enzymes being thoroughly impregnated through the food mass, thus converting the various types of foods into products which are capable of absorption. The second motor function is a pendulum-like movement which aids in bringing the food mass in contact with the mucous membrane, thus hastening enzymatic action. The third motor function is the peristaltic movement which propels the food mass along the bowel. The first two probably have some propulsive function, but they are slight when compared with the full peristaltic movements that occur. It has been demonstrated that in a person enjoying good health, the pressure in the duodenum is highest of any level of the small bowel. The pressure gradient gradually decreases down to the ileocecal valve where it is normally the lowest. This adequately explains the tendency of the semiliquid food mass to move in the direction of the lower pressure. It is well to mention that in obstruction, this pressure is reversed and the high pressure will be low in

the bowel. The tendency for the bowel content to move from the high low pressure is maintained but in the reverse direction to normal.

The digestive process itself is complicated and will be touched upon only to point out some of the changes that occur when obstruction develops and the rational of recommended treatment. Fat digestion occurs as a result of the biliary and pancreatic secretions which are discharged into the duodenum. The bile salts emulsify the fat, preparing it for the digestive action of steapsin. Protein digestion is brought about by trypsin and erepsin. The trypsin converts the protein to the polypeptide stage, while the final change to amino acid is accomplished by erepsin in the lower small bowel.³ Pancreatic amylase converts starches into dextrins which by hydrolyzation are changed to glucose. Even in the well individual the absorption of various foods is subject to some variation. If glucose is ingested, it is probably absorbed in the stomach and duodenum, while the hydrolyzation of starches occurs low in the bowel and they are absorbed there. Fats and protein are absorbed in the lower small bowel. As this complicated chemical and mechanical process is being carried out, it becomes the duty of the organs supplying the digestive juice to produce between five and eight liters daily⁴ for the average individual. The efficiency of this portion of our anatomy is well illustrated when we call to mind that over 90 per cent of all ingested food is absorbed. The absorption function of the small bowel depends upon several variables other than the integrity of the mucous membrane. When the intestinal contents become alkaline, iron salts are not absorbed. If vitamin D is absent, calcium is not absorbed. If bile salts are not present, the fat soluble vitamins A, D and K are not absorbed. It is by osmotic action plus some cell action of the mucous membrane that the absorption of salt, glucose and amino acid is accomplished. The small bowel has the ability to excrete some fat in its upper portion, which is then reabsorbed in the lower loops. Some blood cellular elements, especially the lymphatic group, are excreted and reabsorbed. One other function we should mention is that the small bowel has at least two important endocrine functions. It liberates secretin which is picked up by the blood stream and is carried to the pancreas where it acts as a powerful stimulus to this organ. It produces enterocrinin which increases the flow of succus entericus.

As mentioned, several thousand cubic centimeters of secreted fluid consisting of saliva, gastric juice, bile, pancreatic juice and succus entericus enter into the small bowel each day. By far the larger portion of this fluid is reabsorbed in its passage along the small bowel. Only about 500 cc. daily pass through the ileocecal valve into the colon.

Having briefly reviewed the mechanical, chemical and endocrine functions of the small intestine, it is easy to understand why small bowel obstruction and the abnormality which causes it, concerns

not only a given anatomic area but it also effects either directly or indirectly practically every body function.

At such a meeting as this, it seems a must to accentuate over and over again the urgency of acute intestinal obstruction. The early diagnosis and immediate treatment is of utmost importance. The bowel is strangulated when, in addition to the obstruction, the vessels of the involved bowel segment are also occluded. This serious condition can occur only in mechanical obstruction, mesenteric thrombosis or embolism. Acute obstruction without strangulation is usually spoken of as simple obstruction. The most common cause of acute mechanical obstruction, as pointed out by Baumgartner⁵, and all, is obstruction by bands and adhesions which are closely followed by strangulated external hernia. There are various sorts of internal hernia that too frequently cause obstruction. Among them are hernia through the foramen of Winslow, through openings in the mesentery or omentum, through the diaphragm and through congenital or traumatic openings in the broad ligaments. Volvulus is a rather infrequent cause of small bowel obstruction but it does occur. Primary tumor of the small bowel occurs. Diverticulitis, intussusception, mesenteric thrombosis, congenital anomalies, foreign bodies (gall stones, hair balls), endometriosis, regional ileitis, extrinsic tumors, metastatic tumors, tuberculosis and radiation may all be responsible for small bowel obstruction. Any and all intra-abdominal inflammatory processes may at times be responsible for small bowel obstruction as witnessed by the many cases seen accompanying acute appendicitis with or without perforation.

The acutely obstructed patient presents a series of symptoms that will, if carefully analyzed, make the diagnosis reasonably easy. Pain is the predominant early symptom. It is cramp-like in character and rather sharp, with a peak severity which is reached as the bowel struggles to force its contents beyond the obstructive lesion. The pain diminishes as the bowel relaxes its peristaltic effort and returns as the effort to force past the obstruction continues. Pain may be absent or slight between these peristaltic efforts. As distention develops, the effort becomes more feeble and the pain diminishes. At this point in the illness the patient begins to develop a paralytic ileus as a complication of the obstruction. The patient is usually unable to localize the pain in the intestine. It is most frequently referred to some portion of the anterior abdominal wall. It seems the particular locality to which the pain is referred depends upon the level at which the afferent impulses from the involved bowel enter the spinal cord, the pain sensation being projected along the corresponding nerve roots to the portion of the abdominal wall which they supply.

Vomiting occurs early in high obstruction and much later in low obstruction. At first, the vomitus is clear in color, later it is bile colored and if al-

lowed to progress for any great length of time, it becomes foul and fecal like. The vomiting will be forceful as long as the stomach retains its contractability. Hatcher and Weiss⁶ have pointed out that the vomiting center, which is located in the medulla, is stimulated by way of the vagus or the splanchnic nerves. This explains, in small part, the fact that in high obstruction the vomiting is more copious and profuse. At this point it is well to mention that high obstruction is more fatal than low obstruction.

Careful inspection of the abdomen may be revealing. If the illness has been present for any length of time, distention may be obvious. In the thin patient, loops of bowel may be seen during an early inspection. The peristaltic effort may be seen to come and go. The stethoscope reveals loud splashing in acute mechanical obstruction in marked contrast to the silent abdomen of paralytic ileus. The presence or absence of tenderness and rigidity depends largely on the type and duration of the obstruction. Jones⁷ states that during spasm of the bowel, the tenderness over it may be quite marked. In simple obstruction, tenderness and rigidity are usually absent early in the disease. Codman⁸ has called attention to the feeling of intra-abdominal tension which is felt on palpation.

A constant finding in intestinal obstruction is the early distention of the intestine by gas and later by a mixture of gas and fluid. It is this constant finding that makes the x-ray so valuable in diagnosing and following the progress in obstruction. The gas is mostly swallowed air as has been pointed out by many observers.⁹ Some of the gas is formed by chemical and fermentative action and some is diffused into the gut from the blood stream. Excessive gas in the normal bowel is removed by expulsion from the anus, absorption by the blood stream and by belching. In acute obstruction, we are early deprived of the first two and the most effective of these methods.

The temperature is usually not elevated early unless the causative factor is one which would produce an elevated temperature such as appendicitis, peritonitis, diverticulitis, or pelvic abscess formation. An elevated temperature is the rule when dehydration has become established or bowel necrosis or gangrene has occurred. Some increase in pulse rate is usually present fairly early in obstruction, and it increases in direct ratio to the duration of the obstruction and the age of the patient.

Dehydration and shock occur relatively early in obstruction and autopsy findings in obstruction will be seen to closely resemble that found in death due to shock from other causes. As dehydration and shock continue to develop, toxemia closely follows. Constipation is the rule in low obstruction. After an initial bowel movement or two, there is no further stool or gas passed until the obstruction is at least partially relieved. The free passage of gas by anus is always a welcome development as it is a definite indication of improvement. In high small bowel obstruction, the patient usually will pass

small stools and some gas. Hence the degree of constipation will vary depending on the location of the obstruction.

The best laboratory aid in the diagnosis of small bowel obstruction is the x-ray. No preparation of any kind should be made prior to x-ray examination. An enema given before x-ray may remove gas from the colon which will, if allowed to remain, be a valuable diagnostic sign. Further, if an enema is given, part of the fluid may remain in the colon and cause false fluid levels which will confuse the interpretation sufficiently to make the findings unreliable. No intubation, with or without suction, should be done prior to x-ray, as gas and distention in the upper gastro-intestinal tract would likely be removed further confusing the x-ray findings. The x-ray in obstruction is so important that nothing should be done to lessen its value and accuracy. X-rays should be taken in the flat, erect and lateral positions. Films in the flat position give the degree of distention, location of the distended coils and their relation to the large intestine. The upright and lateral positions will give the fluid levels. Feldman¹⁰ lists the following x-ray signs of obstruction of the small intestine:

1. Gaseous distention of the loops of bowel.
2. Presence of fluid levels.
3. Characteristic distribution of the distended loops in a step ladder arrangement.
4. Loss of bowel markings—especially late.
5. Absence of gas in the colon.

Gas in the small bowel in patients over two years old is abnormal and should be considered as evidence of obstruction. Wangenstein¹¹ and Lynch found that it took approximately four hours for gas to appear after experimental obstruction. Case¹² has noted that if the cecum contains gas, it is not likely that the obstruction is in the small bowel. In doubtful cases an x-ray study of the colon with a barium enema is a completely justifiable procedure. In a few carefully selected cases we have used a thin barium mixture in small amounts by mouth or long tube and have gained valuable information.

The blood chemistry in the obstructed patient shows many changes. Hemoconcentration may be marked. The nonprotein nitrogen is elevated and may attain a level as high as in uremia. It is important because if it continues to rise,—regardless of the treatment,—the patient will die. The increase in nonprotein nitrogen is due to tissue breakdown and dehydration. The blood chlorides are lowered with a noticeable increase in the carbon dioxide combining power. Alkalosis is produced by lowering of the blood chlorides,—the excess of base left in the blood stream combines with carbon dioxide to form bicarbonate.

Haden and Orr¹³ in 1923 demonstrated the blood changes mentioned, and it was assumed that the chloride loss was of greatest importance. The loss was considered to be due to the severe vomiting and loss of gastric hydrogen chloride. The popular treatment became the administration of large

amounts of sodium chloride and water but such treatment failed entirely to reduce the high mortality. Death frequently occurs before the blood chlorides are appreciably reduced. Today it is felt that the distention of the bowel is the most important factor, and that the mechanism of shock is present in severe and fatal cases. Treatment based on this premise is startlingly successful. Harris¹⁴ makes the interesting and useful observation that if a long tube is passed and remains in the stomach and the patient is given unlimited amounts of water by mouth, when the suction is connected and this water is rapidly withdrawn from the stomach, this causes an outpouring of salt into the stomach and a fall in blood chlorides occurs thus producing dehydration—the very thing we are trying to avoid. He carefully restricts fluid intake by mouth to four ounces every two hours until it is proven by x-ray that the tube is in the small bowel.

Bowel distention is a powerful stimulant to secretion. As mentioned before, five to eight liters of fluid enter the upper gastro-intestinal tract each 24 hours and are absorbed in the lower small intestine. This amount is greatly increased by acute distention. It becomes apparent that the great loss of these fluids is not caused by vomiting, but is due to the outpouring of fluid in the upper bowel and failure of absorption in the lower bowel, plus a large amount of secreted fluid which is poured out along the entire distended bowel. Vomiting itself is merely nature's means of getting some of the excess fluid out of the gastro-intestinal tract and is not a cause. The cause of death in acute small bowel obstruction is due to shock or perforation and peritonitis or a combination of the two.

As strangulation of a loop of bowel occurs, it becomes most important that we be aware of the pathological changes that occur. The loop itself becomes paralyzed by pressure on the nerves. Venous pressure increases, and there is marked engorgement of the small veins with a loss of serum and leukocytes into the bowel wall which becomes thickened and heavy with edema. Small hemorrhages occur secondary to rupture of the capillaries. The serosa becomes dull and purple in color. Occlusion of the arteries leads to gangrene and the loop becomes black. Ulcers form and perforation may occur. Baldrige¹⁵ mentions that as much as 45 per cent of blood plasma may be removed from the circulating blood stream as the capillaries in the involved area become permeable. It is lost into the bowel wall, the bowel lumen and the peritoneal cavity.

The treatment of mechanical small bowel obstruction is urgent, but not too much so as to neglect the intelligent use of each weapon at our command to accurately diagnose, and if surgery is decided upon, to prepare the patient for surgery. The ideal treatment is early operation before complications resulting from distention and infection have occurred. Unfortunately, many of these patients are not seen early and the problem of treat-

ment becomes most complicated. From the effect and results of distention, we can readily agree that the most important single method of treatment is decompression of the distended loops. The duration of the obstruction cannot be accepted as a criterion as to the amount of bowel damage. One sees gangrene of the bowel after a few hours of obstruction, in some cases, especially those due to hernia,—while in others obstruction may be present for days with only negligible bowel damage. Hence, in the use of the long tube, one must not be lulled into a false sense of security by temporary improvement. Mechanical obstruction is a surgical emergency, and at the opportune moment, surgical intervention should be carried out. Wangenstein¹⁶ made an outstanding contribution to American surgery when he introduced his continuous gastric suction apparatus. The long tube, as introduced by Miller-Abbott,¹⁷ and improved upon by the Harris¹⁸ single lumen tube, is much more effective in small bowel obstruction,—especially those low in the bowel. It is our opinion that immediately following x-ray study, the passage of a Harris weighted tube should be started. Harris¹⁹ states that once the tube has been successfully introduced into the stomach it will pass through the pylorus and into the obstructed bowel unaided by further manipulation, or it will not pass at all. Every effort should be made to utilize the force of gravity in passing the tube into the small bowel. A sitting position, or a walking one, will frequently cause the tube to pass. Coiling of the tube in the stomach must be avoided. This results from trying to hurry the descent of the tube. When the three foot mark on the tube is reached it is important to ascertain the location of the tip by x-ray. It is inadvisable to pass the tube beyond the four foot mark, as the weighted end may pass beyond the ileocecal valve, and the effectiveness of the suction will be diminished, plus the danger of not being able to pull the mercury weighted bag back through the ileocecal valve. If the x-ray shows that the end of the tube has passed into the colon and it does not pull out easily, it is best to cut the tube and allow it to pass through to be expelled rectally. The same care is necessary if a weighted Miller-Abbott tube is used. Constant suction with frequent inspection to see that the tube is not clogged is necessary to assure complete decompression of the distended bowel. In a number of cases in which the tube would not pass readily, we have been able to assist it through the duodenum at operation. When the x-ray shows that the tube has descended to the desired level, and unless contraindicated for some specific reason, feeding of a soft well balanced diet may be started. If surgery has been carried out and the obstruction relieved without resection of the bowel, soft food is usually well tolerated in about 24 hours. This early feeding is of benefit in re-establishing normal small bowel function. The long tube should be left in place until any infection present is well controlled and bowel

movements have again been established. A trial period of clamping off the tube and observing the bowel's ability to function on its own is advisable before removing the long tube. This is especially true in cases where bowel viability may be questionable or in cases where primary resection was carried out. If passage of the long tube has been impossible for some reason as is occasionally the case, decompression must be accomplished and a Witzel or some other type enterostomy should be employed. The long tube is merely an enterostomy through the nares, but it has definite advantages and some disadvantages. If an enterostomy is used, it too much be attached to a suction apparatus to obtain the best results. We have in a few cases employed both an enterostomy and the long tube with satisfaction. They were cases in which the long tube had been successfully passed prior to surgery but failed to decompress the bowel. In these cases the enterostomy proved most useful. If a long tube is not available, then an enterostomy should be done in every case with distention at surgery. The enterostomy site should not be far above the obstructed area. Let me again point out that mechanical obstruction is a surgical problem calling for surgical intervention, and the improvement most of these patients show on tube decompression does not in any way remove your obligation to operate and give to your patient the unquestioned benefits of well done surgery in this condition.

We have noted the severe dehydration that occurs in the obstructed patient and mentioned the types of fluid involved. Their replacement is essential, and it should usually be volume for volume. A carefully kept record of fluid intake and fluid output is essential. In the late care of intestinal obstruction the chemical laboratory can be most helpful. However, we are primarily interested in seeing that our patients do not progress to the point where the blood chemistry changes are indicative. One may feel that the fluid balance is being maintained if the 24 hour excretion of urine is between 1,000 cc. and 2,000 cc., and that the specific gravity ranges from 1.012 to 1.020. If the obstructed patient puts out only a small amount of urine in 24 hours and the specific gravity is low (below 1.010) dehydration and shock are indicated. The presence of noticeable chloride in the urine specimen indicated that the salt intake is adequate. The presence of chloride in the urine can be easily determined by the addition of one cc. of five per cent silver nitrate to a few cubic centimeters of urine. A white precipitate indicates that sodium chloride is being excreted by the kidneys. If no precipitate occurs, more saline is needed. This simple test is based on the fact that the kidneys withhold sodium chloride when the serum chloride level is low. Hemoconcentration may be avoided by careful comparison hematocrit determinations. It has been mentioned that large amounts of plasma are removed from the circulating blood stream and must be replaced. The administration

of commercial plasma will handle the situation nicely as will the use of whole blood. We find the use of whole blood quite satisfactory, however, a combination of blood and plasma are frequently used. Several commercial protein solutions are available which may be used to good advantage in maintaining the protein balance in the obstructed patient. If the patient is restless and apprehensive, we have found Baxter's protein solution with alcohol to be quite useful. If the obstructed patient emits only a small quantity of urine of a specific gravity higher than 1.020, this usually means an inadequate intake of water. The excessive injection of fluids, with or without salt, cannot be determined by simple, easily available laboratory tests. However, careful record of the fluid intake and output plus careful evaluation of the clinical findings, will warn us that fluids are being administered in excess. The presence of pulmonary edema and or subcutaneous edema, along with cardiac embarrassment, are the most important signs of excessive fluid administration.

The addition of B Complex to injected fluids seems beneficial and should be done in every case. The use of adrenal cortex is subject to more debate and has been shown by Rhoades²⁰ to be of no value in maintaining plasma levels. It is, however, of value in fixing sodium in the tissues, and the patient whose electrolyte balance is difficult to maintain, should be given adrenal cortex. It does no harm. It seems important at this point to call to your attention the great importance of maintaining a normal potassium level in the obstructed patient. Potassium plays a vital part in extracellular metabolism, and it is our feeling that in the severely ill obstructed patient, potassium deficiency is the rule rather than the exception. Serum potassium levels should be determined in every case. If the potassium level is low, dramatic improvement may be expected following its administration. We have given it orally, parenterally and rectally. The latter two are our methods of choice. If the drug is being used in therapeutic doses, its effect on the heart must be ever in mind and frequent electrocardiograms are urged.

Various drugs are often used in treating patients with obstruction, without appreciation of their effect on the gastro-intestinal tract. Strombo²¹ points out that atropine and hyoscine cause inhibition of contraction and loss of tone of the small bowel. Barbiturates decrease the amplitude of intestinal contraction. Even aspirin causes a decrease in small bowel peristalsis. The one drug that is ever useful is morphine given in small, frequent doses. Morphine in small doses has a definite tendency to contract the small bowel. If in surgery, it is possible to release the obstruction without resection, the early use of prostigmine is indicated because of its

small bowel effect. The use of pitressin with it seems of value because of the effect it exerts on the large bowel. Prostigmine has a low incidence of side effects and definitely increases small bowel tone and motility.

The use of oxygen in the obstructed patient is of definite value, not only because of its beneficial effect on the cardiac and respiratory action, but because of its assistance in reducing the intestinal gas volume. Penicillin, streptomycin and the sulphonamides do not effect small bowel peristaltic movement and should be administered as indicated.

The mortality rate in acute small bowel obstruction is still high. It can be materially reduced by early diagnosis and early operation. It is difficult to understand why so many obstructed patients are under observation for many hours or days before the diagnosis is made and proper treatment begun. A survey of cases seen by us late in the disease has brought out the fact that the physician first seeing the patient did not think of obstruction until the condition became far advanced. Any patient presenting himself complaining of crampy abdominal pain may be obstructed, and the possibility of that diagnosis must be considered in every case. A careful history and inspection of the abdomen with x-ray in every suspected case will make the diagnosis early in the vast majority of cases.

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PERITONEOSCOPY*

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AND

S. N. LANDIS,** M.D.

DES MOINES

ENDOSCOPIC examination of the contents of the peritoneal cavity is a diagnostic method nearly 50 years old, having been first demonstrated by Kelling in 1901.¹ Many reports of this type of examination appeared, mostly in the foreign literature, before the method was popularized in this country by Rudock.^{2, 3, 4} He described an instrument and a safe

cera. Inspection of the entire abdomen within the limitations of adhesions is then accomplished.

Biopsies of liver are obtained using the biopsy forceps with its optical system. These specimens measure approximately 8x4x3 mm. and are ordinarily adequate for microscopic diagnosis. We have not found coagulation of the biopsy site necessary to control bleeding. In the event a biopsy cannot be obtained in this manner, a Silverman-punch biopsy needle is inserted through the anterior abdominal wall and guided to the liver under direct vision. For biopsy of the spleen, a number 13 trocar is introduced through the abdominal wall and inserted into the spleen. The stylet is removed and splenic pulp

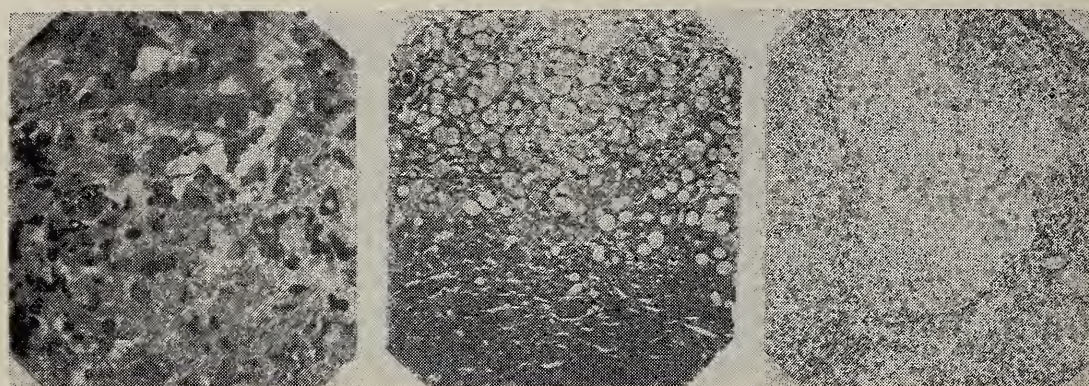


FIGURE 1-A: J. V.—Photomicrograph (x500) of liver showing acute hepatitis with infiltration by segmented granulocytes and round cells. Grossly, the liver was slightly enlarged and deep brown.

FIGURE 1-B: D. W.—Photomicrograph (x100) showing extensive fatty metamorphosis of liver. Grossly, the liver was considerably enlarged and of a light color with a distinct yellow tint.

FIGURE 1-C: C. F.—Photomicrograph (x60) of liver showing cirrhosis with scarring and regeneration of liver parenchyma.

technic (1934), and later (1939) reported the results of 900 examinations. We have been applying the procedure to the study of hepatic disease.

TECHNIC

Asepsis is practiced. Premedication consists of hypodermic morphine, usually 11 or 16 mg., with 0.4 mg. of scopolamine and 0.1 gm. of seconal orally one hour before examination. Demerol may be used in place of morphine. After preparing the abdomen and infiltrating a local anesthetic (one per cent novocain), a one-fourth inch incision is made through the skin about two centimeters below and slightly to the left of the umbilicus. Site of incision varies considerably, depending on the location of suspected intra-abdominal lesions and the position of scars. A pneumoperitoneum needle is then introduced. Air is insufflated until the percussion note over the entire abdomen is tympanic. The needle is withdrawn and a 28 French cannula with trocar is inserted. Ascitic fluid, if present, is removed with an aspirator inserted through the cannula. The examining telescope is then introduced. Sufficient air is insufflated to create a six to eight centimeter space between the anterior abdominal wall and the vis-

aspirated using suction afforded by a 50 cc. syringe. Specimens are placed immediately in formalin and handled as any other biopsy material. Paraffin sections of the long narrow strip of tissue obtained from a punch biopsy are sectioned longitudinally.

After completion of the examination, which may be facilitated by turning the table into a Trendelenberg or Fowler position, the telescope is withdrawn and easily recoverable air is allowed to escape. The defect is closed with a skin clip.

MATERIAL

One hundred and six examinations have been performed on 96 patients. Thirty-four patients had cirrhosis, 15 had no disease, 14 hepatitis, 11 adhesions,

CHART I

	Patients	Examinations
Cirrhosis	34	40
Normal	15	15
Hepatitis	14	15
Adhesions	11	12
Metastatic neoplasm	7	8
Unsatisfactory examination	4	4
Indeterminate examination	2	2
Leukemia	2	2
Sarcoidosis	1	1
Extra-hepatic carcinoma	1	1
Undetermined hepato-and-spleno-meagly	1	1
Polyserositis	1	2
Brucellosis	1	1
Peritonitis	1	1
Chylous Ascites	1	1
	96	106

* Sponsored by the Veterans Administration with the approval of the Chief Medical Director. Statements and conclusions published by the authors are a result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

** From the Department of Internal Medicine, Veterans Administration Hospital, Des Moines, Iowa.

7 metastatic neoplasm, 2 leukemic infiltration and one each sarcoidosis, brucellosis, extra-hepatic carcinoma, indeterminate hepato-and-splenomegaly, polyserositis, peritonitis and chylous ascites. Four examinations were unsatisfactory and two were indeterminate. (Chart 1). Single liver biopsies were obtained in 54 instances, and in five cases, both lobes were biopsied. Spleen biopsies were obtained on three occasions.

DISCUSSION

The properly premedicated patient experiences little discomfort from the examination. He is ambulated immediately. Occasionally shoulder top pain resulting from diaphragmatic irritation by retained air is present for 24 to 48 hours. To date we have not encountered any difficulty in performing the examination, and there has been no morbidity or mortality.

The four unsatisfactory and two indeterminate examinations were due to the presence of widespread intra-abdominal adhesions which precluded adequate vision.

Normal: The normal abdominal contents on peritoneoscopic inspection show the liver to be mahogany colored, smooth and with a sharp edge. The

Hepatitis: The liver in acute hepatitis appears either small and dark brown or large and slightly lighter in color than normal. The surface remains smooth. (Figure 1A).

Metastatic Carcinoma: Metastatic nodules in the liver vary from pin point to several centimeters in diameter and are usually located over the surface. They have the appearance of grayish-white irregular mounds of tissue definitely originating within liver parenchyma. (Figure 2B). In our brief experience metastatic malignancy has been readily recognizable.

Adhesions: Intra-abdominal adhesions with or without the history of previous abdominal surgery vary from spider web delicacy to massive fibrous bands which bind down intestine, liver and other structures. In two cases peritoneoscopy was done because patients complained of symptoms of intermittent intestinal obstruction. All other studies were non-contributory. Peritoneoscopy revealed adhesions involving small intestine. These adhesions were later broken up surgically, and the patients became asymptomatic.

Leukemia: In two cases of leukemia the liver and spleen were huge and light pink. (Figure 2A). The capsules were tense and shiny. One case showed

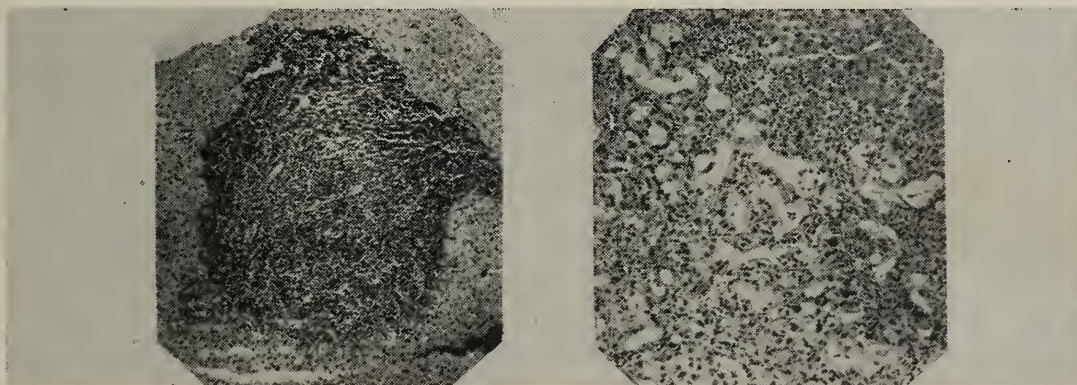


FIGURE 2-A: C. D.—Photomicrograph (x100) of liver showing leukemic infiltration. Grossly, the liver was enlarged and salmon colored. The clinical diagnosis was chronic lymphatic leukemia.

FIGURE 2-B: F. S.—Photomicrograph (x100) of liver showing infiltrating metastatic adenocarcinoma. The primary lesion was bronchiogenic. Grossly, the liver did not appear abnormal, and there was no evidence of metastatic nodules. A random biopsy of the right lobe on section showed definite infiltration which had not yet reached the liver surface.

capsule is thin and the underlying parenchyma is an even red-brown color. The gallbladder is readily visualized in about one half of the cases and has the appearance of a light green cystic structure. The spleen is ordinarily not visualized. The stomach, small intestine, colon and omentum are easily identified.

Cirrhosis: The earliest change in cirrhosis is apparently a change in color due to fatty metamorphosis. The color becomes definitely lighter than normal even though the liver has not enlarged perceptibly. With beginning enlargement there is slight blunting of the edge. As the hepatomegaly increases, the color becomes yellow-pink. (Figure 1B). Later the surface starts to become granular. As the advanced stages of cirrhosis are reached the surface becomes nodular. (Figure 1C).

a white, thin, patchy exudate which was interpreted as perisplenitis and perihepatitis.

Miscellaneous: The cases of sarcoidosis and brucellosis noted in the chart showed small multiple granulomatous-appearing lesions scattered over the surface of liver. (Figure 3).

Not infrequently, such lesions are seen. They are smooth, flat and only slightly elevated above liver surface. Microscopically they are non-specific. Similar lesions have been observed in approximately ten per cent of our cases.

SUMMARY

1. One hundred and six peritoneoscopic examinations have been performed on 96 patients. There has been no morbidity or mortality. The technic is simple. The examination has facilitated the study of liver disease. It has been possible in nearly every

instance to obtain adequate biopsies for microscopic diagnosis.

2. There is a close correlation between the gross and microscopic diagnosis of hepatic disease. During recent examinations we have been able to predict with considerable accuracy what the sections will

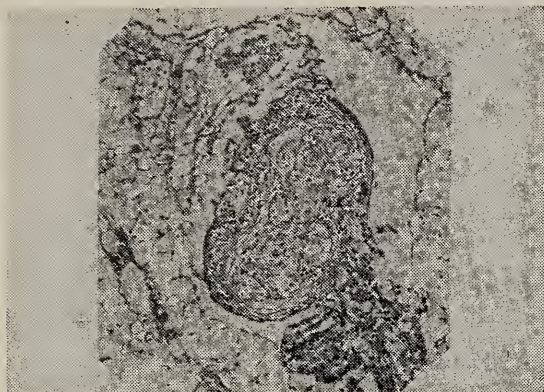


FIGURE 3: J. K.—Photomicrograph (x100) of a non-specific granulomatous lesion compatible with sarcoidosis in perihepatic adipose tissue. Grossly, the liver was studded with small white punctate lesions. The patient also had bilateral pulmonary infiltrations.

show histologically from the gross endoscopic appearance.

3. Histologically proved hepatic disease has been discovered when other laboratory aids were non-contributory or equivocal. This procedure has obviated the necessity for blind punctures to obtain liver biopsies, thereby reducing the chance of perforation of a hollow viscus.

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WILLS FOR PHYSICIANS*

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THERE IS A widespread superstition which deters many persons from practical consideration of the question "What will be done with my property after my death?" The superstition seems to be that making a will is an invitation to fate to strike one down. It is difficult to believe that physicians, whose professional duties require a sensible attitude and intelligent philosophy on the ever present matter of life and death, could be among the superstitious. Whatever the reason, the evidence indicates that physicians are certainly among the many who fail to make the necessary provisions for distribution of their hard-earned possessions when the inevitable occurs.

Indeed, physicians were counted "present" when a recent survey disclosed that 60 per cent of the decedents whose estates were probated in the Probate Court of Cook County in the last 20 years failed to leave wills. The result was that the estates of all these persons—money and property which they had accumulated in a lifetime of effort—descended to and were arbitrarily distributed among their heirs at law in accordance with the statutes of the state of Illinois.

In many instances that distribution was contrary to the wishes of the decedent, worked a hardship on the members of his immediate family, entailed unnecessary expense and provided windfalls for relatives who had contributed nothing toward its accumulation and who may have been wholly unknown to the decedent. The harsh and often inequitable disposition of one's assets at death may be avoided by the simple expedient of making a will.

Just as society makes the laws which provide rules of conduct in daily life, so, too, society has devised the method by which one can dispose of one's worldly goods. It is only logical that the laws—statutes in the various states—recognize that "blood is thicker than water." Frequently a person, for any number of human reasons, wishes to bestow on someone unrelated by blood a good part, a small part or all of his wealth. But the law cannot know the reasons or even the desire to so. Only the fact of blood kinship can be considered when it is left to the law to make a distribution.

What must be clearly kept in mind, therefore, is that making any disposition of property other than by the law of descent is a privilege which must be acted on. The instrument by which this may be done, and which is recognized by the law, is the will, or "testament." The law describes how a will must be executed and requires strict compliance. Hence a will is a written instrument by which one makes a disposition of property to take effect after death, within the limits fixed by the statutes of several states. The testator (maker of the will) may dispose of his property by will to whom he pleases, limited only by the rights given by law to a surviving husband or wife. He may disinherit any or all of his blood relatives, even his children, no matter how unjust his exclusion of his heirs may be, and he may give his property to a stranger to his blood.

Anyone who has attained his or her majority and who is of sound mind and memory may make a valid will. The will must be in writing and executed in accordance with the requirements of the state law. It may be changed from time to time by the testator through the making of a codicil or an entirely new will. A codicil is an addition, or supplement, and is usually amendatory or explanatory of the original document. It is a part of the will and must be executed with the same formality as a will. The use of the codicil often results in contradiction and confusion. Consequently, when changes are desired the execution of a new will

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is recommended. (Other pertinent definitions: An executor is the person who is named by the testator to execute the provisions of his will. An administrator is the person named by the court to administer a decedent's estate when there is no will.)

Making a will requires more than merely writing out intentions, if one really wants to have one's wishes carried out. Its language must be clear and unambiguous, and it must be executed in accordance with the law. In preparing and executing it one should have the assistance of a competent lawyer, and this is certainly one instance where, I believe any physician would agree, "an ounce of prevention is worth a pound of cure." Many a physician who is aware of the hazards of a layman's self diagnosis fails to recognize the analogous pitfalls in his acting as his own lawyer. In the field of law he is no longer a professional, he is a layman.

A will should be well planned, carefully written, revised from time to time to keep it up to date, and placed where it can be found when needed. I would suggest the following procedure as a well ordered course:

Prepare a memorandum containing a list of your assets, including all assets associated with your medical practice, how you desire to dispose of them and a list of your nearest relatives, together with their last known addresses (they have to be notified when your will is presented for probate even though they take nothing under it). Then see a lawyer, present the memorandum to him and tell him what you want to accomplish. He will bring to your attention the necessity of naming an executor (in Illinois, he must be a resident of the state). He will also point out the desirability of requiring a surety bond as a protection against avoidable loss, unless the surviving husband or wife or some other trustworthy person is to be named. In such cases it is customary to provide that he or she be authorized to act on the filing of a personal bond with surety waived. The lawyer may point out the advantages of naming a bank or trust officer as executor, since the experience and judgment of their trust officers, coupled with the fact that they are impartial and will deal objectively with any situation that may arise, recommend their appointment. He will also inquire as to what provision, if any, you have made for the payment of federal estate and state inheritance taxes, which may be assessed.

At this point it is well to know that in these days of high taxes and involved tax laws the preparation of a will by an expert may result in substantial savings in taxes, leaving more of the estate to be distributed. An example of possible savings in taxes is provided by the marital deduction provision in the Revenue Act of 1948. The requirements for qualifying a bequest to a spouse as a marital deduction are technical and require the help of an expert.

When the will is drawn, provision should be made to meet payment of federal estate and state inheritance taxes. There are many tragic instances

in which failure to plan necessitated sale of assets at a sacrifice for the satisfaction of tax claims. Remember, too, that your will can become out of date unless it is revised from time to time. Personal relations change, children are born and sometimes beneficiaries named in your will die before you do.

Finally, make certain that the will is kept in a place where it may be quickly brought forward when it is needed. Leaving it with a lawyer or bank or trust company is recommended, or it may be placed in a safe deposit box. In any event, keep it in the place where you have your insurance policies, title papers and other valuable documents, and let someone you trust know of its existence and whereabouts.

It is apparent that the making of a will involves a careful planning of affairs and is not merely a disposition of assets effective after death. A man and wife approaching the making of a will with proper planning gain a whole new conception of their affairs and take steps that are to their advantage during their own lifetime, such as placing the family bank account and title to the home in their joint names, in addition to providing safeguards and benefits for their prospective survivors.

When death occurs and a will has been properly made, the survivor or survivors are then obliged to have the will recognized by the law and its provisions carried out. The widow, or someone acting for her, should immediately contact the family lawyer, turn the will over to him and be guided by his advice.

Everyone should make a will. When a man dies without having made a will, the law makes one for him. The following case, I think, indicates plainly some additional advantages of making a will.

A man has an estate of \$50,000. He has a wife and two minor children. His will states that he wishes all his property to go to his wife, and that he is making no provision for the children because he is fully confident that she will provide care and education for the children from the money he is leaving. He names her as executrix and stipulates that she act on her personal bond without surety. When the lawyer presents the will to the court, the administration of that estate is relatively expeditious and inexpensive.

In a similar case, but one in which the man does not leave a will, the law decides the manner of distribution. In Illinois, one third of the estate after expenses and debts are paid goes to the widow; the remaining two thirds go in equal parts to the children. Immediately, the law sets up a variety of safeguards. The widow is entitled to be named as administratrix, but she must provide bond with surety. This usually means a surety company bond, for which a premium is paid. Next, an estate must be opened for the minors and a guardian appointed. The widow may be appointed guardian of her own children, but again she must provide a surety bond and pay a premium. In addition, the children's share must be deposited in the

minors' estate; it cannot be used except for the care of the minors and may be withdrawn only with the approval of the court. This means that every time a withdrawal is to be made and the money is to be used by the widow petitions must be filed and presented to the court, entailing the employment of an attorney and involving various court charges. It can easily be seen that failure to make a will in the circumstances set forth above involves the widow in burdensome legal duties together with extra expense.

It is perfectly proper for a man to set up any numbers of controls within the limitations of the law for his children or for strangers or for anyone else he wishes to share his estate. That is entirely his business, but he must make it his business, through execution of a will clearly setting forth his desires. It should be noted that when a person dies without leaving a will and without any heirs, the entire estate by operation of law goes to the community; in Illinois it goes to the county in which he has resided.

More than 30 per cent of all wills are drawn during the year prior to death. This means that a great many wills are drawn in haste or at time of unusual mental or physical stress or illness. These and the ones in which the makers lacked testamentary capacity, or have been subjected to undue influence, are the wills that are constantly being broken or which lay the foundation for long drawn-out and expensive legal battles. Certainly making a will should be the careful and considered act of every man and woman who respects human and economic values. It should be undertaken when a person is in good health and of sound mind, when he is motivated by the wish to implement the right of personal judgment, reflecting the love he bears for those closest to him.

STATE UNIVERSITY OF IOWA
COLLEGE OF MEDICINE
CLINICALPATHOLOGIC CONFERENCE
October 25, 1950

SUMMARY OF CLINICAL RECORD

THIS 61 YEAR old white female entered the University Hospitals stating that she had suffered from diabetes for five years; she had been taking protamine zinc insulin 17 u. and regular insulin 13 u. each morning and had been following a regulated diet. Three years previously, she began having exertional dyspnea and ankle edema. She had been told that her blood pressure was 170 to 180. For these symptoms she had received digitalis, mercurial diuretics and a low-salt (diabetic) diet. With each mercurial injection the patient stated that she lost six to eight pounds. For the six months prior to admission there had been almost constant ankle swelling. She had suffered several episodes of awakening at night to sit up in order to "catch her breath."

Her past history revealed that she had "St. Vitus dance" at five years of age and at 29 years of age had suffered from an episode of migratory arthritis characterized by red, swollen and tender joints. Her fingers had remained deformed.

Physical examination revealed a dyspneic, chronically-ill woman who lay propped up in bed. There were a few rales in both lung bases. The heart was enlarged to the left with a loud systolic murmur heard over the precordium. The blood pressure was 180/100. The pulse rate was 90 per minute with an irregularity. The liver extended four fingerbreadths below the costal margin and was non-tender. There was considerable edema over the sacral region and in both lower extremities; the venous pressure was elevated. She was placed on bed rest, a mercurial diuretic, sedatives and digitoxin. The diabetes was adequately controlled by diet and insulin. She responded well to therapy as evidenced by a dropping of the venous pressure and disappearance of the edema. She was discharged on the fifth hospital day.

The patient's second and final admission occurred ten months later. She had been on an estimated diabetic diet and had been taking 20 units of regular insulin each morning. She had suffered no insulin reactions and her daily morning urine specimens had been sugar free on chemical tests. Each day she had been taking 0.2 mg. of digitoxin, three "high blood pressure" pills, a mercurial diuretic and sleeping capsules. For six days prior to this admission she had been nauseated and suffered a sharp right lower quadrant pain accentuated after eating. Therefore, she had been ingesting only "tea and toast." She stated that the pain caused her to sweat. Her temperature, taken once daily, had been normal. Her stools had been formed and normal and she denied eructation, tarry or bloody stools or diarrhea. The exertional dyspnea had been increasing, her ankles had been swelling more constantly, and she found it necessary to sleep propped up in bed. There had also been paroxysms of nocturnal dyspnea. Her urinary output had diminished prior to admission.

At physical examination, the patient was sitting up in bed receiving nasal oxygen. Circumoral pallor and flushed cheeks were present and her temperature was 99.2° F. There were numerous fine moist rales at both lung bases. The heart was overactive and enlarged to the anterior axillary line and the beat was characterized by an irregularity; a rough apical systolic murmur was audible. The blood pressure was 190/120. The abdomen was tense, slightly distended, with some tenderness over the right lower quadrant and over the liver area. The liver was firm and palpable five fingerbreadths below the costal margin. There was moderate pitting edema of the lower extremities.

The hemoglobin value was 15 gm. per 100 ml.; red blood cell count 5,200,000 per cu. mm.; white blood cell count 9,050 per cu. mm. A peripheral blood smear showed band polys six per cent, segmented polys 70 per cent, lymphocytes 21 per cent, and monocytes three per cent. The urine had a

specific gravity of 1.012 with an albumin of 3+; no sugar or blood were demonstrated. Microscopic examination of the urine showed three white blood cells per high powered field. The blood sedimentation rate was 31 mm. per hour. The blood urea nitrogen was 24 mg. per cent, creatinine 2.2 mg. per cent and fasting venous blood sugar 170 mg. per cent.

On the evening of admission the patient became confused, more dyspneic and complained of epigastric pain. She had a chill, became cyanotic, and had a profuse diaphoresis. The cardiac rate was 120 per minute and irregular; an increased number of moist rales were audible at the base of the lungs. The patient's rectal temperature was 101.6° F. and the white blood cell count was 9,500 per cu. mm. A roentgenogram of the abdomen with the patient in an upright position showed no evidence of free air beneath the diaphragm and there was no gas distended loops of bowel. In the next few hours the patient improved with a return of normal color and a decrease in her elevated temperature.

The urinary output was approximately 200 cc. per day. Her diet consisted of clear liquids supplemented by parenteral fluids. During the hospital course she was kept comfortable with morphine sulfate. Rapid shallow respirations and the tender abdomen continued and normal peristaltic sounds were present on auscultation. She became less responsive and on the evening of the third hospital day no peristaltic sounds were audible. On the morning of the fourth hospital day the patient was found to be icteric and her extremities cold and cyanotic. The body temperature was elevated to 101.4° F. There were coarse rhonchi in both lung bases with a poor respiratory exchange. The heart rate was 160 per minute and irregular. The abdomen was distended and the patient was incontinent of feces. The breath had a uremic odor. The patient expired later this same day.

Abstracted by Dr. Roy J. Phillip, Medicine.

CLINICAL DISCUSSION

Dr. Jack M. Layton, Pathology: First, I should like to call on Dr. Gillies to show the x-ray film he has of this particular patient.

Dr. Carl L. Gillies, Radiology: The information on the protocol is incorrect insofar as the x-ray examination is concerned. We only saw this patient once and obtained this film which is a six foot film of the chest, a teleoroentgenogram. It demonstrates an enlargement of the cardiac shadow, the ratio being 0.54. Normal should be 0.5 or under. The lung fields are clear, the heart shows a characteristic contour with flattening of the left border and enlargement of the ventricle, the contour being that of a mitral stenosis. There is no evidence of free air beneath the diaphragm, so this chest film shows only an enlarged heart with the contour suggesting an old mitral stenosis.

Dr. Layton: Dr. DeGowin is going to discuss this case from the facts which are available in the proto-

col, only. He is not acquainted with the autopsy findings.

Dr. Elmer L. DeGowin, Medicine: There are a number of points which can be learned from this protocol. The question still remains in my mind as to whether this patient actually did have diabetes. Many people of middle age who are obese have glucosuria and hyperglycemia, but are not particularly affected. It is a common habit of making the diagnosis of diabetes from a demonstration of glucosuria alone, but that is not enough. The fact that the patient was on insulin does not help us much. She might have merely tolerated this insulin.

We are often confronted with a history in which the patient states that he or she has been told the blood pressure is 170 or 180. This information does not help much in a woman of 61 who presumably might have some arteriosclerosis at that age. It is perfectly possible for a patient to have a systolic pressure of 170 or 180 with a normal diastolic reading merely due to inelasticity at the arch of the aorta.

We were given the dosage of insulin that the patient had, but not what kind of a diet she was taking, except that it was a "diabetic diet." A diet should be named from its composition and not for its therapeutic purpose, but here we had no clear idea of what the patient's carbohydrate metabolism was doing. Many statements are relatively meaningless if they are not put in quantitative form.

The patient is said to have had "St. Vitus' dance" at the age of five years which, of course, is the common name for chorea, Sydenham's type and suggests that she had at that time manifestations of rheumatic fever. There was an episode at the age of 29 of a migratory arthritis, the duration of which is not stated, but the fingers remained deformed afterwards. Most textbooks state that the joint changes in rheumatic fever are transient and leave no deformity, but like all other things in textbooks, those are generalizations which are not always true. It was the experience during the last war where large numbers of patients with acute rheumatic fever were seen in the Army and Navy hospitals that a few with obvious rheumatic fever ended up with what looked like classical rheumatoid arthritis with deformed joints, so I do not believe the history here rules out the fact that the patient possibly had a couple of attacks of rheumatic fever.

The heart was obviously enlarged. It is said there was a loud systolic murmur heard over the precordium. That is not enough of a description to help in the diagnosis of a valvular lesion. We want to know the pitch of this murmur, where the point of maximum intensity was and where it was transmitted. The fact that the patient had auricular fibrillation was quite obvious and note that ten months before the final admission the patient had a liver palpable four fingerbreadths below the costal margin and was not tender. Now, in a patient who has a liver that large from cardiac failure which is not tender, the lack of tenderness suggests that the condition is of long standing. The most common cause

of hepatomegaly from chronic passive congestion over a long period of time perhaps is mitral stenosis, rather than hypertension.

This patient had a systolic murmur over the precordium and was fibrillating. Therefore, if the patient did have mitral stenosis, frequently diastolic or presystolic murmurs would not be audible. One would look for additional evidence of mitral stenosis by an attempt to evaluate whether the right ventricle was more accessible than normal and whether the pulmonary second sound is accentuated.

On the last admission, ten months later, the patient was obviously in poorer condition than before. The findings of the first admission suggested that certainly the patient had something the matter with the heart, with a large liver perhaps due to chronic passive congestion and with auricular fibrillation. The two most common causes for auricular fibrillation are mitral stenosis and arteriosclerotic heart disease. The blood pressure taken at that time was 180/100. A diastolic pressure of 100 is relatively not high, and one would say that just purely on the basis of chance again the probabilities were that the patient had mitral stenosis, auricular fibrillation and chronic failure. Ten months later, the situation had changed somewhat because six days before admission she had some pain in the right lower quadrant of the abdomen which was particularly sharp and accentuated after eating and made her nauseated and made her sweat. Again from the description she was in cardiac failure and the symptoms continued to get worse. The subsequent description also directs some attention to the abdomen. We have the added advantage which the physician taking care of her at the time did not have; we know that this was a fatal disease and that is a big help in the differential diagnosis. We know now that this pain was probably not due to spastic constipation for example. The physical examination on this second admission showed the blood pressure to be somewhat higher. I cannot attach any significance to this fact. From the description, at least, she was having quite a bit of abdominal pain. She had peripheral edema. I would like to know what the pelvic examination showed.

On the evening of admission she obviously became a lot worse. The patient became confused, she had more epigastric pain, more dyspnea and chills. She became cyanotic and sweated profusely. Something else must have happened at that time. Unfortunately, we are not told what the stools showed or whether they contained any blood. We are told the patient said she did not have any blood in the stools, but no record of an examination is mentioned. Among other things, we would think of mesenteric thrombosis in which bloody stools are frequent, but not always present.

Someone was worried about the possibility of perforation of a viscus because special roentgen examinations were made for air under the diaphragm. The fact is also noted that on this last admission the patient had not been producing much

urine, and that on examination there was a rather slight nitrogen retention. One should think of the possibility that the renal lesions which frequently accompany diabetes, especially in people of this age, were producing renal failure. There is a lesion called Kimmelstiel-Wilson disease or intercapillary glomerulosclerosis which sometimes produces death in diabetes by uremia.

There are other possibilities for the oliguria. Here is a patient who apparently was acquiring more severe cardiac failure and fluid could well be held in the abdominal cavity or in other tissues while more edema was being formed and a transient oliguria would result. Secondly, if there were an infarction any place in the body, in the gut, in the peritoneal cavity or even a pulmonary infarct, a certain amount of fluid would be held there and might account for an oliguria. We do not have any weights on this patient during this time so we are unable to evaluate that situation.

For the first several days after this severe pain she had rigidity in the epigastrium, and then she was short of breath; but the peristaltic sounds were recorded as normal for a couple of days and finally they ceased. Here we can conclude she was getting paralytic ileus for one reason or another. This is possible sometimes in the terminal stages of almost any disease that is not too sudden in its termination. It might be due to cardiac failure alone, it might be mesenteric thrombosis, it might have been peritonitis.

The morning of the fourth day, the patient became icteric. Again we are not told anything about the color of the stools. This occurs occasionally in cardiac failure but not often. We see it occasionally as a result of peritonitis in the terminal stages, or there might be infarction of the liver involving the biliary system. The patient had a fever these last few days.

How can we sum these things up? In the first place I think we ought to get clear on our thinking in the use of the term "diagnosis." Diagnosis is a much abused term among the medical people. When we suspect one condition over another, we say that is our diagnosis. On the other hand, if we prove the diagnosis of carcinoma by biopsy and examination of tissue, the same term is employed. What we need is some way of scoring diagnoses as to our degree of certainty. I think if we adopt the practice of the statisticians of saying "plus or minus one per cent correct" or "plus or minus 50 per cent," that might help some. Diagnosis from the facts presented here could only be plus or minus 50 per cent in my opinion.

If I were to venture a guess on this patient, I would say she probably had mitral stenosis. Whether she had diabetes or not, I do not know, but I do not think it had much to do with the situation. She probably had been in chronic cardiac failure for a long time and then one of three complications occurred which cannot be differentiated from the facts given. I would put mesenteric thrombosis as my

first choice as the abdominal complication, pulmonary infarction as the second and myocardial infarction as third. I have no particular preference for those three, actually, on the data submitted. I do not think it is too far out of the way to consider here cardiac failure with superimposed ruptured appendix and peritonitis. Diabetes with renal lesions would probably not explain all the symptoms.

Mr. Richard E. Saar, Student: Our discussion this morning was unsatisfactory from the standpoint of making a diagnosis, but the majority of the class did feel that the following things were probably present; diabetes, some form of hypertension, renal disease and cardiac failure. As far as the cause of death was concerned, the majority felt that it was directly due to congestive failure, 18 voted that it was due to uremia, one felt that it was due to mesenteric thrombosis with peritonitis and four felt it might be coronary occlusion.

Dr. Layton: Perhaps Dr. Kinard could tell us what the clinical diagnosis was when this patient left the ward.

Dr. Kenneth H. Kinard, Medicine: The last note on the patient is as follows: "This patient had hypertensive cardiovascular disease with enlarged heart, auricular fibrillation and mitral insufficiency. She also had diabetes, controlled and arteriosclerosis, general. The terminal events were congestive failure, renal insufficiency and bronchiopneumonia. The cause of the terminal jaundice may be on the basis of congestion of the liver. However, the factor behind the episode of circulatory embarrassment and abdominal pain on February 21 has not been adequately explained. Factors considered were pulmonary embolus, embolus with thrombosis of the mesentery, abdominal aneurysm and perforated viscus. With the patient in congestive failure, surgical exploration was contra-indicated in the opinion of the staff concerned."

NECROPSY FINDINGS

Acute suppurative appendicitis with a perforation near the base of the appendix was found at autopsy. A fecalith was present in the lumen at this site. Generalized acute peritonitis accompanied the perforation, and non-hemolytic streptococci were cultured from the exudate. The heart showed calcific stenosis of the mitral valve, and arteriosclerosis was generalized. A mild degree of dilatation of the pancreatic acini was present, but islands of Langerhans were not unusual. The liver showed the effects of chronic passive congestion and mild bile stasis. A moderate degree of arteriolosclerosis was present in the kidneys, slightly more intense on the right.

NECROPSY DIAGNOSIS

Acute suppurative appendicitis with perforation. Peritonitis, generalized, acute (non-hemolytic streptococci).

Calcific stenosis of mitral valve of heart.

Cardiac hypertrophy, dilatation and fibrosis.

Generalized arteriosclerosis.

Arteriolosclerosis, kidneys.

Dr. Layton: It is quite apparent that this patient was a problem to all who saw her when she was in the hospital. The problem of undiagnosed ruptured appendix in older people is a cause for great concern and Dr. Womack will tell us a few things about this condition.

Dr. Nathan A. Womack, Surgery: Insofar as the diagnosis of acute appendicitis is concerned in a person in this situation, it is a difficult event to recognize. Dr. DeGowin mentioned it in his closing remarks, and I think he was very adept at doing so. People who are old, either chronologically or physi-

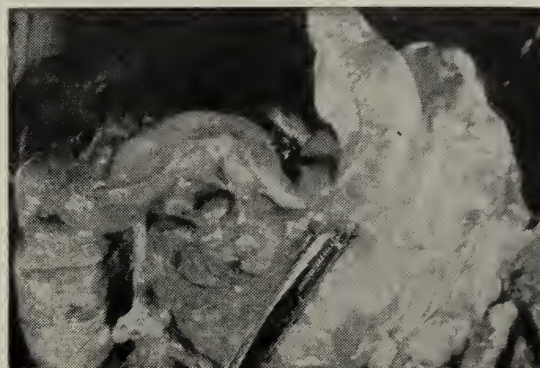


FIGURE 1. Hemostat in perforation of appendix. Peritonitis of adjacent bowel and mesentery.

cally, or people who are critically ill from other causes, are less prone to show evidence of abdominal catastrophes than is the healthy youngster.

In all probability this patient had her appendicular obstruction with perforation before she entered this hospital, because the clinical picture she presented was a picture of obstruction from an abscess rather than a spreading infection. I think you can see the reason for that statement in the photograph.

The terminal ileum was bound down over this abscessed area. As you will recall, when there is food in the stomach, there is always a stripping motion of the terminal 10 or 15 cm. of the ileum. Therefore, when this patient ate, she had pain. When the stethoscope was placed on her stomach, there were audible peristaltic sounds present. We are concerned here with a picture of partial intestinal obstruction or local ileus from abscess formation. Unfortunately, this abscess apparently broke the last day or so of her life when she developed a spreading peritonitis. It was at this time that she showed a more intense picture of shock and her abdominal muscles became diffusely rigid and there was no longer audible peristalsis.

I wish I could say that this is unusual; it is not. One must always be on the lookout for the presence of a perforated appendix in an older person who comes in with bizarre abdominal symptoms. Since such a patient is free from the usual symptoms that we associate with perforated appendicitis, and since we consider such an association statistically

rare, we often miss the diagnosis as I think we will always frequently miss a diagnosis when the lesion is statistically rare.

Dr. Layton: Another question which should come up is, if this condition had been diagnosed, should the patient have been operated upon. That brings up the question of surgical risk in cardiac patients. Perhaps Dr. January could give us a few remarks in that respect.

Dr. Lewis E. January, Medicine: The efforts to classify patients, grade them so to speak, as to their chances of surviving surgical procedure has been notably unsuccessful. In the light of present day anesthesia, antibiotic and oxygen therapy, surgical technics, blood transfusions and better recognition and management of diseases of the heart, the impressions of a few years ago no longer hold. I think it is agreed that a surgical procedure imposes a certain stress on the circulation and this stress varies with the skill of the surgeon, the anesthetist, the surgical procedure to be done and on the wisdom with which pre- and post-operative care is directed. When all of these are added to the variables of heart disease itself, it is not surprising that there is no scientific way of grading a patient's risk.

Accurate diagnosis of the heart disease and inquiry into the patient's exercise tolerance are more important than all the tests known. If a patient has serious heart disease which significantly limits his activity, he is a diminished risk, though not necessarily an unacceptable one. However, it may be necessary under such circumstances to postpone surgery or even abandon it altogether unless the surgical procedure gives promise to saving the patient's life. This compromise may result in less than ideal treatment. There are certain conditions which impose such a hazard as to make operation almost impossible, irrespective of the gravity of the emergency. Most important is acute myocardial infarction. Usually the worst mistakes in this regard occur when patients with acute myocardial infarction are diagnosed as having some abdominal catastrophe leading to emergency surgery. Such patients, if the infarct is a fresh one, will almost always die, sometimes on the operating table, more often after the operation from shock or from progressive congestive heart failure. Congestive heart failure of any degree adds immeasurably to the risk and whenever possible surgery must be delayed until measures can be instituted for its control.

I think if you remember these points you will be surprised how frequently patients with serious heart disease tolerate major surgery, providing of course that unexpected complications do not arise: the patient's blood is adequately oxygenated during the procedure and in the immediate post-operative period; sudden sustained changes in blood pressure do not occur and fluid and electrolyte balance are adequately managed. Obviously cardiac patients can get into difficulty from electrolyte imbalance like all other patients. However, if it is allowed to progress unrecognized, it becomes even more im-

possible to correct it because the large amounts of intravenous fluids required will overload the circulation.

Dr. Layton: I have asked Dr. Cullen to refresh our memories with a few synoptic comments on the use of our choice of anesthetic agents in elderly people, especially those with cardiac disease.

Dr. Stuart C. Cullen, Anesthesiology: There are factors that I would like to mention in the choice of anesthetic agent or technic which seriously influence the outcome in patients with heart disease.

One factor that I want to mention is the position of the patient. It is tradition, of course, to place the patient on the operating table in the recumbent position if the operation is to be in the abdomen. It is convenient sometimes from the surgical standpoint to have the patient in the head-down position. In these patients in whom there is diminished cardiac reserve to the point of decompensation or if they are on the borderline of compensation, a significant interference can be achieved with their ability to maintain compensation if their position is abnormal. There might be advantage in taking these patients to the operating room and putting them on the operating table in the position in which the patient needs to be operated upon and noting their response as far as their ability to maintain ventilation, an efficient circulation, the changes that may occur in the heart rate and any other signs one may be able to pick up that may indicate what the reaction of this patient is in this particular position. Of course, this is not possible if it is an emergency. This not only helps to evaluate the changes that may occur in the patient during the operative procedure, but it also helps to arrive at some assessment of what that patient's changes are going to be during the anesthesia with respect to whether it is a change due to the position or a change due to the anesthesia or a change due to blood loss or to surgical manipulations.

As far as the choice of anesthetic agent or technic is concerned, only one fundamental factor enters in and that is the factor that Dr. January mentioned of insuring that this patient at all times got adequate oxygen and adequate carbon dioxide elimination. If the anesthetic agent and technic is based on this choice, then usually we can arrive at some sort of reasonably satisfactory solution of the problem. That means that one needs to avoid or minimize the opportunity for hypotension and the diminution of coronary blood flow. It means that one has to insure against obstruction during the anesthetic procedure which may interfere with oxygen supply. It means that one would prefer to use an anesthetic agent or technic during which the patient can be supplied with sufficient oxygen.

Dr. Layton: In summary we should like to leave this point with you. Acute appendicitis, with or without perforation, or for that matter perforation of any abdominal hollow viscus, is at times missed in elderly patients, particularly in those who are already under medical care for some other disorder.

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Vol. XLI FEBRUARY, 1951 No. 2

Required Postgraduate Work or Periodic
Re-Examination

We all rebel at the thought of having to take any more examinations. We even hope we will never have to write another driver's test. Thousands are killed by faulty drivers, yet how many are improperly diagnosed and improperly treated because some doctors are still practicing the same kind of medicine they were taught a quarter or a half century ago. Medicine today, in diagnostic methods, drug therapy and surgery, is about as much different as driving a modern airplane would be from driving old Dobbin.

In general let us say we believe medical practitioners have kept up pretty well. We would not say very well. Our staff programs, state and national journals, medical clubs and untold medical associations have disseminated far and wide the marvelous improvements in medical science and practice. Yet when we see, occasionally, a patient who has had chills, fever and leucocytosis for several weeks and has had no blood cultures, agglutination tests or benefits or the newer antibiotics, we wonder. Not long ago a chart was reviewed at one of the hospitals. Although the attending physician was prominent in his county and state society affiliations, it was found that not one of the valuable new pharmaceutical aids used in cardiology had been applied although the patient was in acute cardiac failure. The only medicines being given were such as were in use 30 years ago.

The American Academy of General Practice requires 50 hours of postgraduate work yearly to retain eligibility for membership. Why could this not be applied to the specialty groups and to all

licensed practitioners of all fields? This is just food for thought. Let us keep our association above reproach.

Our Responsibility to the Fifty-Fourth
General Assembly

The Fifty-fourth General Assembly is now in session. Many bills will be presented to it. Some will emerge as laws and others will fall by the wayside. The medical profession has no legislation at this time which it is trying to have enacted but it does have an active interest in many of the bills which will be considered. Doctors as citizens also have a definite responsibility to study the proposed legislation and talk to their senators and representatives about that in which they have a definite interest. If we are to have a good government at home, in the state and in the nation, we must accept our responsibility of knowing what is being proposed and of expressing our views on it to the men we elect to represent us.

Much preliminary work has been done by the Legislative Committee of the State Society. A legislative contact man has been appointed by each county society to work with the state Legislative Committee. Meetings have been held in various counties by the legislative contact man and other interested citizens. Although your county's contact man is the officially designated liaison officer between your county and the state committee, this does not mean that he should carry the entire load for the other doctors. Remember that we are first of all citizens and as such must do our part in seeing that our government is what we want it to be. As doctors we are interested in the betterment of the health conditions of the public and will work toward that end. In working for the latter, let us never forget the former.

Management of Perforated Peptic Ulcer

For many years acute perforations of peptic ulcers have been treated as surgical emergencies. If these patients are operated within the first eight to ten hours, the mortality will be four or five per cent. The operative procedure indicated in the individual case will vary from simple closure of the ulcer, closure of the ulcer plus gastroenterostomy, to a subtotal gastric resection and the perforated ulcer simultaneously. The rationale for the more radical procedures in the presence of a recent perforation is that the incidence of persistent peptic ulcer symptoms after such procedures is much lower than following other methods of management. Recently there has appeared a trend to treat perforated ulcers without operation. Some of these are probably not true free peritoneal perforations. Others undoubtedly will seal by agglutination and the patient will recover. A word of caution seems indicated to those who would consider such management. The late complications and the problems

encountered in their care in some patients, not to mention the deaths, should lead to adherence of considering surgery at the earliest possible time as the more conservative management.

Baldrige-Beye Memorial Loan Fund

For 15 years the State Society has offered an award to the student writing the best essay or doing outstanding work in the College of Medicine at Iowa City. This award has been made to perpetuate the memory of Dr. Clarence W. Baldrige and Dr. Howard Beye, both of whom were killed in automobile accidents while en route from the University to talk to members of the medical profession in the state. Both were outstanding men in their field; both were excellent educators and strong figures in the educational world.

For the past few years the award has not been given because there have been no applicants. The State Society has, however, had many inquiries about possible loan funds for worthy medical students. Conditions change, as evidenced by the seeming lack of interest in the award; but the basic need for medical men remains the same. For that reason the Board of Trustees, after a great deal of study, has decided to set aside \$1.00 from each paid membership in the State Society to a fund to be made available as loans to students in the College of Medicine at the State University. Loans will be granted to students to complete their training, provided, of course, that their work is of sufficiently high caliber to warrant continuation of their studies.

Arrangements will be made for repayment of the loan after a man is established in practice. Provision will also be made for contributions to the fund from sources other than the State Society. The Baldrige-Beye Memorial Committee, composed of one member nominated by the State Society and two members nominated by the College of Medicine, will pass on applications.

While the funds available the first year will be small, eventually the amount should become significant. It may be possible to aid only one or two students the first year, but as time goes on and more appropriations are paid from dues, and as loans are repaid and possibly contributions are made to it, the fund should be large enough to provide a good deal of help.

The trustees feel that all members of the State Society will be in thorough accord with this method of helping worthy students finish their medical training. They believe all who knew Dr. Baldrige and Dr. Beye will be happy that their names are to be associated with this new loan fund because it is a plan which would have had their approval and support and will help carry forward their ideals for better medical care and better medical men.

HIGHLIGHTS OF THE MEETING OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

The midwinter session of the American Medical Association was held in Cleveland December 5-8, 1950. The officers of the Association invited the delegates, secretaries, executive secretaries and public relations officers to attend the final meeting, which was on the national education campaign.

Nearly all of the delegates were present for the session. The first order of business was election of the General Practitioner of the year. Dr. Dean Sherwood Luce of Canton, Mass. was recipient of this honor.

The speaker of the House, Dr. Francis F. Borzell, spoke on rules governing the procedure of the House and commented on the present trend away from socialism as evidenced in the November election.

Dr. Elmer L. Henderson, AMA president, discussed the encouraging trend away from socialism, and then announced that the American College of Surgeons is going to continue its standardization program for hospitals in cooperation with the American Hospital Association, the Council on Medical Education and Hospitals of the American Medical Association and the American College of Physicians. He said that many sources of financial help to medical schools had not been tapped and hoped that voluntary methods could be found to support them rather than government funds. He felt physicians as a whole had not done their part, not through indifference but possibly through lack of knowledge of the necessity. He believed that they faced the obligation of assisting medical schools.

In discussing public health units, Dr. Henderson said regional public health units were necessary to provide people with the care they should have. The action taken on these units at San Francisco had been misunderstood and suggested the House review its action and clarify the situation.

Dr. George F. Lull gave figures on the increase in membership and also spoke of the many problems facing the Association.

Dr. Louis H. Bauer, Chairman of the Board of Trustees, said that the next midwinter session of the American Medical Association would be held in Houston the first week in December, 1951; the 1952 midwinter meeting would be held in Denver, and the 1953 meeting in St. Louis. He raised the question as to whether the midwinter meetings were worth while. The meeting is not self sustaining and the trustees would like an expression of opinion regarding their continuation.

In discussing dues in the American Medical Association, Dr. Bauer said that if a physician is unable to pay complete county and state dues because of financial hardship, he will not have to pay AMA dues. However, the American Medical Association will not forgive dues for a man who pays full

county and state society dues. All dues-paying members will receive the *Journal of the American Medical Association*. Fellows may select some other journal if they wish, but this privilege will not be given to members. Fellowship dues for 1951 will be \$5.00; subscription to the *Journal* \$15.00.

The National Emergency Medical Service, Civilian Defense and Blood Banks were widely discussed subjects. The Committee on Blood Banks recommended that each state society set up a committee on blood banks and emphasized that the national emergency blood program must continue to be a three-pronged activity, each of which must be developed to keep the whole program in balance. These three parts are: (1) the maintenance of supplies of blood and plasma for normal civilian requirements, (2) furnishing whole blood and plasma to the United States Armed Forces and (3) the development of dispersed reserve supplies of equipment for collecting blood and dispersed reserve supplies of blood plasma for civilian defense. The reference committee which studied the matter agreed heartily with the committee and went on as follows:

"In the opinion of your committee, we are faced with a real emergency. The time for talk is past. The time for action is here. Let us be realistic. The Committee on Blood Banks has told you what must be done. They cannot do it, neither can it be done at 535 North Dearborn. What we need is more blood and blood derivatives."

The report of the Council on National Emergency Medical Service received high praise. It covered every essential detail necessary to the implementation of a Civil Defense program and procurement of medical officers for the armed services. In addition and as a further aid to the economical utilization of the limited number of physicians available to the nation at this time, the Council recommended that the American Medical Association urge that reserve medical officers not on active duty be utilized to the fullest extent to complete and execute a single final type physical examination of inductees, recruits and reservists that is acceptable to the armed forces, with point accreditation under public law 510. It felt civilian defense would be with us for a long time and the medical profession must exert a forceful, dynamic leadership in the whole program.

The Committee on Rural Health reported it was gradually solving its problems through the cooperation of many community agencies. Its annual conference is growing in importance and stature.

The Judicial Council reported on matters which it had been studying since the last session. It said that hospitals harboring unethical physicians may be removed from the approved lists, but urged that physicians try to solve their problems at the staff level. If unable to do so there, then the next step should be to the county medical society, then the state, before appealing to the national.

The report of the Legislative Committee covered

many of the bills in Congress and the possibilities of new bills to be introduced at the next session.

The report of the Interim Committee on Constitution and By-Laws recommended that the Association appoint a permanent committee on this subject in order to keep the constitution and by-laws up to date and to receive suggestions for changes in time to give them careful study and consideration. It also made specific amendments which were passed by the House of Delegates. These dealt with membership, dues, apportionment of delegates and delineation of duties to certain Councils.

The report of the Council on Medical Service was evidence of the great amount of activity in that department and its recommendations and their adoption guarantee expansion of this Council.

All of the reports of the various councils and bureaus proved how much work the Association is doing along all fronts. Many of them pointed to the need for further study and activity.

The House adjourned at noon on December 8, but on that afternoon the officers of the Association presided at a large meeting where details of the advertising campaign were given. All who attended were heartened to know of the cooperation extended by many other groups and industries throughout the country. Of great interest was the address of a labor leader stating his opposition to government medicine.

The session ended on a note of encouragement for work well done but with a full realization of the tasks still ahead in civilian defense, emergency medical service, medical education, medical service and possibly public relations or interpreting to the public the purposes and objectives still to be achieved.

DOCTOR, DO YOU HAVE A HOBBY?

What is life without a hobby? There might be several answers to that and so we will let you write your own. The point is—do you have a hobby? If so, why not prepare an exhibit of it for the Sioux City meeting? We have two good rooms available for a hobby show and we would like to see them filled to capacity.

If you have a hobby, you are probably interested in other people's hobbies also. If you will help us build a good show, it will afford you an opportunity to talk about what you like to do and to visit with other doctors about what they like to do. "And this was the start of a beautiful friendship."

Write the state office or to Dr. James E. Reeder, Jr., Davidson Building, Sioux City 13, for space. We will be glad to hear from you.

SIOUX CITY RESERVATIONS

Have you made your hotel reservations for the Annual Meeting in Sioux City to be held April 23-26? Some of the available hotels are the Martin, Mayfair, Warrior and West.

President's Page

Dues for the State Society and the American Medical Association amount to \$75 for 1951. This may seem like a large sum to persons who are not familiar with what dues are charged by other organizations, nor with the benefits which each physician derives from the above dues.

For the past three years, the activities of the State Society have cost more than its income. The *Journal*, the Speakers Bureau and the Committee on Medical Service and Public Relations probably were responsible for the greater portion of the deficit, but every doctor in Iowa benefited directly from the activities of these three divisions. In fact, the cost of running the Committee on Medical Service and Public Relations increased because of the demands the physicians made upon it and the service they wished from it.

The trustees have carefully prepared a budget for 1951. They give the following figures on dispersal of your dues: First, it will take \$4 to cover the overdraft for 1950, an overdraft which was anticipated. The *Journal* will take \$2.88; Speakers Bureau \$1.20; Medical Service and Public Relations \$10.68; Administrative Miscellaneous \$2.64; Rent and Office Supplies \$1.92; General Salaries \$6.17; Trustees \$.36; Council \$.50; Medicolegal \$.65; Other Committees \$1.92; Legislative \$2.64; Taxes \$.72 and County Society Services \$2.40. These figures are based on 1,800 dues-paying members.

Dues in the American Medical Association will cover a subscription to its *Journal*. They will also help support the many activities of the Association. The special journals take money; the Quarterly Cumulative Index Medicus is expensive; the 1950 Directory cost \$70,000 more than it brought in. The laboratories cost approximately \$100,000 a year; the Council on Medical Education and Hospitals \$250,000; the Council on Pharmacy and Chemistry, Committee on Research, Council on Physical Medicine and Rehabilitation and the Council on Foods and Nutrition have budgets amounting to \$300,000; health education costs \$175,000; the Bureau of Investigation spends more than \$20,000 to expose quackery and the Bureau of Legal Medicine and Legislation requires more than \$75,000. These are but a part of the divisions of the Association which serve the physician and the public. Anyone wishing more information about his national organization will find the handbooks, available on request, most instructive.

Dr. Austin Smith, editor of the *Journal of the American Medical Association*, makes this statement: "Any one department, if used fully by the member, will more than repay him for the small amount of money spent in dues." We believe this is true not only of the American Medical Association but also of your State Society. Singly we could not afford the benefits; united we make them possible to all.

T. F. Thornton, M. D.

President, Iowa State Medical Society

NEWS NOTES

From The Committee On Medical Service And Public Relations

BLUE SHIELD ANNOUNCEMENTS

The CLAIM BANK used by doctors to report professional services rendered *Blue Shield* subscribers has been revised and is available to physicians upon request. Write the office of Iowa Medical Service (Blue Shield), 324 Liberty Building, Des Moines, Iowa. Your request for these new forms will be acknowledged at once. Please exhaust your present supply before requesting the new blanks.

The enrollment department of the Sioux City Blue Cross Plan has set a goal of 25,000 new BLUE SHIELD members to be enrolled during 1951. In the 26 counties now serviced by this plan, there are approximately 25,000 protected by Blue Shield. If the Sioux City Blue Cross Plan fulfills its prediction of 25,000 new members this year, it will have to enlist as many members during the remainder of 1951 as were enrolled throughout the preceding five.

They are in the process of reorganizing and expanding their sales force so it is possible that the Sioux City Blue Cross Plan will reach its estimate by the close of 1951.

Mr. Woodrow H. Sherin, Executive Director of Iowa Medical Service (Blue Shield), represented the plan at a joint actuarial-statistical conference in Detroit, January 18. Enroute to the Detroit meeting, Mr. Sherin visited the headquarters of Associated Blue Shield Plans. He planned his trip in order to become familiar with the operations of the national office and to study various methods employed by other plans in reporting and paying claims.

One of the actuarial problems considered was coverage for children from birth to 18 years of age. Under the present Iowa Blue Shield contract, protection begins for an infant at 90 days and continues to age 18.

Mr. Sherin believes it may be possible to alter some of the present methods used in his office to make the processing of claims more efficient and prompt. One change which may occur is that of monthly payments to the physicians for services rendered Blue Shield subscribers instead of the present payment for each individual claim. In other words, should this procedure be adopted, Blue Shield will pay the physicians once a month instead of each time a claim is submitted and approved. At present, the patient is not advised the amount allowed a physician by Blue Shield but is expected to get this information from the doctor. Notification to both the doctors and subscribers on

payments made by Blue Shield is being considered by the plan.

You will note in a paragraph above that the form used by physicians for reporting services rendered a Blue Shield subscriber has been revised. If you have any suggestions concerning any of the afore-mentioned, please write Mr. Sherin and he will appreciate your comments.

The Committee on Medical Service and Public Relations held its first meeting of the year, January 28, in Des Moines. Dr. Fred Sternagel, Chairman of the Committee, called his committee together to draft plans for 1951 activity. Publicity for the state meeting in April, the annual medical, radio, press conference, social welfare, legislation, rural health, veterans' affairs, public health and Woman's Auxiliary were all discussed by the committee.

SPEAKER'S BUREAU RADIO SCHEDULE

During February, the Speaker's Bureau will present two series of electrical transcriptions prepared by the American Medical Association. A series entitled "Tea for Three" will be broadcast over station WSUI in Iowa City. Radio station WOI in Ames will broadcast "The Best Is Yet to Be."

WSUI—Tuesdays at 11:45 a. m.

January 30	Insomnia
February 6	Feet
February 13	Weight
February 20	Rheumatism
February 27	Relaxation

WOI—Thursdays at 11:15 a. m.

February 1	Out of the Silence (Deafness is not a crime and hearing aids do help)
February 8	Years of Tomorrow (Retirement Pays Off)
February 15	Three Score and Ten (Cancer is not always fatal)
February 22	Indian Summer (Are you going through that "change"?)
March 1	Fear Is the Enemy (Heart attack does not always mean invalidism)

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. CLAIRE H. MITCHELL, Indianola

President-Elect—MRS. HOWARD W. SMITH, Woodward

Secretary—MRS. RALPH J. SELMAN, Ottumwa

Treasurer—MRS. DWIGHT C. WIRTZ, 449-56th St., Des Moines

MAGAZINE ARTICLES ON HEALTH INSURANCE

Because of the widespread interest in the subject of health insurance, the Council on Medical Service of the American Medical Association has compiled the following list of pertinent articles which have appeared in national magazines. These periodicals are on file in most local public libraries where they are available to students and others interested in the subject.

Lists of other material not generally available to the public may be obtained by writing to the Council on Medical Service, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

"Fable of the Gullible Gull" *Reader's Digest*, October, 1950. The sad story of the plight of the seagulls when the shrimp fishers moved to new beds. It draws a parallel to the frustrations of the individual under the Welfare State.

"Can a Nation Afford Health for All Its People?" Rebecca West, *Ladies' Home Journal*, September, 1950. Miss West attempts to justify the steps Great Britain has taken and yet at the same time recognizes that Compulsory National Health Service is not the answer for all nations.

"Health Care—England and U. S. A." Dorothy V. Whipple, M.D., *The Survey*, September, 1950. Doctor Whipple compares the private practice of medicine in the United States with the practice of a panel doctor in England.

"Welfare, It's Wonderful" *Reader's Digest*, September, 1950. Reprinted from the *Congressional Record*. An interesting word picture of the conditions which might exist in a Welfare State.

"How Kansas Finds Country Doctors" Harold B. Clemenko, *Look*, August 29, 1950. A picture story of one plan used to attract young physicians to settle in rural areas.

"The Hidden Tax Bill on \$50 a Week" *Ladies' Home Journal*, August, 1950. The story of a real-life family of four, who pay practically no income tax as such, but for whom the "tax take" on their daily food and household expenditures is considerable.

"The Best Doctor for You" Clive Howard, *Woman's Home Companion*, August, 1950. An article which emphasizes the advantage of a family doctor who is familiar with the patient's background and history.

"The Man the Doctors Hate" Paul F. Healy, *Saturday Evening Post*, July 8, 1950. A story about Oscar Ewing, Federal Security Administrator and the chief proponent for socialized medicine and for a federal department of welfare to be under his control.

"Is Your Doctor a QUACK?" Clive Howard, *Redbook*, July, 1950. An article which tells of the procedure of the Medical Ethics Committees (or Grievance Committees) of state and county medical societies, in policing their own ranks.

"Here's Health the Voluntary Way" Elmer L. Henderson, M.D., *Reader's Digest*, May, 1950. The President of the AMA gives an interesting argument in favor of voluntary health. Includes a brief résumé of Doctor Henderson's qualifications and career by Paul DeKruif, Ph.D., eminent medical writer.

"There Is Another Way" (Editorial) *Life*, March 27, 1950. An expression of the need for individualism and self-reliance in raising the health and social standards of the American people, as opposed to the growing dependence on a government dole.

"Health Insurance Is Next" Russell W. Davenport, *Fortune*, March, 1950. An article comparing the various health insurance bills introduced in Congress.

"The Unhappiest Man in England" Harold B. Stassen, *Reader's Digest*, March, 1950. Mr. Stassen tells of the trials and tribulations of a British dentist under the British National Health Service, the effects of overloading on his practice and the time consumed with red tape and paper work.

"Mr. Welfare State Himself" Holmes Alexander and Joseph R. Slevin, *Collier's*, February 4, 1950. A story by two Washington newspapermen of Oscar Ewing's personal life, background and training and the plans he has made for a health and welfare bureaucracy in the United States.

"The Road Ahead" John T. Flynn; Book Condensation, *Reader's Digest*, February, 1950. A condensation of Mr. Flynn's book in which he tells of the evils of socialism and develops his reasons for believing that the current "Welfare Statism" has gone a long way down the "Road" and how service clubs, church groups and other organizations are unwittingly assisting.

"Granny Is Gone" Harold B. Stassen, *Reader's Digest*, February, 1950. This article tells of the confusion and hardship in obtaining hospital beds

(particularly for elderly patients) under the present British National Health Service program.

"The Price of Health; Two Ways to Pay for It" *Time Magazine*, February 20, 1950. Elmer Henderson, M.D., President of the AMA, takes a stand for voluntary insurance and Oscar Ewing, Federal Security Administrator, advocates a compulsory payroll tax program as a way of paying for medical care.

"The Doctor Brushed Off Utopia" Henry La-Crossett, *Collier's*, February 11, 1950. An English physician, Doctor Gampell, tells of his experiences under the British National Health Service Act and why he felt it necessary to forsake his practice and start from the beginning in a new country.

"Every Patient Has His Day" Fred DeArnold, *The Nation's Business*, February, 1950. A summary of the Alameda County (California) Medical Society plan through which every individual is guaranteed medical care and is assured of a hearing should he be dissatisfied with the medical service received.

"Never, Never, Never!" Harold B. Stassen, *Reader's Digest*, January, 1950. A report of the British National Health Service program which describes the viewpoints of English citizens from all walks of life.

"What's Wrong With Our Hospitals?" Harold B. Clemenko, *Look*, January 17, 1950. An illustrated story of the rising hospital costs and overcrowding of hospital bed facilities in the United States.

"Can We Have Good Doctors for Everyone?" Murray Teigh Bloom, *Woman's Home Companion*, December, 1949. A description of the program through which the Alameda County (California) Medical Society guarantees medical care for every individual in the community regardless of his ability to pay.

"Doctors' Bill Made Reasonable" Mike Gorman, *Reader's Digest*, November, 1949. A brief summary of the Colorado State Medical Society's method for handling complaints regarding physicians' fees together with explanations of the society's minimum schedule of typical fees.

"Think It Over" Herbert Hoover, *Reader's Digest*, November, 1949. Ex-president Hoover decries unnecessary personnel, waste and mounting costs among government bureaus as a step toward socialism.

NATIONAL CONFERENCE ON MEDICAL SERVICE

All doctors are invited to attend the twenty-fourth annual meeting of the National Conference on Medical Service, February 11 in the Red Lacquer Room of the Palmer House in Chicago.

9:00 A. M. Registration: Foyer, Red Lacquer Room, Fourth Floor Palmer House

9:30 A. M. CALL TO ORDER:

Appointment of Committees

Address of the President—Ransom

D. Bernard, M.D., Des Moines

9:50 A. M. THE DOCTOR'S ROLE IN CIVIL DEFENSE—Norvin C. Kiefer, M.D., Director, National Security Resources Board, Health Resources Division, Washington, D. C.

10:20 A. M. WHO'S NEXT FOR MILITARY SERVICE?—Howard A. Rusk, M.D., Professor and Chairman, Department of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center; Chairman, Health Resources Advisory Committee, National Security Resources Board; Chairman, National Advisory Committee, Selective Service System. Col. Richard H. Eanes, M.C., U.S.A., Chief Medical Officer, Selective Service System, Washington, D. C.

11:10 A. M. THE DOCTOR'S CASE AGAINST COMPULSORY DISABILITY INSURANCE—Mr. E. H. O'Connor, Managing Director, Insurance Economics Society of America, Chicago.

12:15 P. M. SUBSCRIPTION LUNCHEON

1:00 P. M. "OUR AMERICAN HERITAGE"—Donald J. Cowling, Ph.D., President Emeritus, Carleton College, Fairfield, Minn.

2:00 P. M. SHALL THE HOSPITAL BE THE OFFICE OF THE PHYSICIAN?—A Panel: Mr. Joe Norby, Administrator, Columbia Hospital, Milwaukee, Wisc.

Mr. Mac F. Cahal, Executive Secretary, American Academy of General Practice, Kansas City, Mo.

2:40 P. M. CAPITOL COMMENTS—J. S. Lawrence, M.D., Director of the Washington Office of the American Medical Association.

3:00 P. M. A TRAINING PROGRAM FOR PHYSICIANS FROM UNAPPROVED FOREIGN SCHOOLS—Willard Wright, M.D., Member of the State Board of Medical Examiners of North Dakota, Williston, N. D.

3:20 P. M. MEDICAL STUDENTS GET THEIR OWN AMA—Mr. Leo E. Brown, Executive Secretary, Student American Medical Association, Chicago.

3:40 P. M. DISCUSSION PERIOD.

4:00 P. M. REPORT OF COMMITTEES AND ELECTION OF OFFICERS.

4:30 P. M. ADJOURNMENT.

STATE DEPARTMENT OF HEALTH

Nolan Dierwing

RINGWORM ON THE INCREASE

Ringworm does not kill anyone, nor does it seriously cripple. However, it is currently Iowa's number one school nuisance problem. With each new month more counties are reporting ringworm of the scalp. We have had the disease in Iowa for years but not at the high levels nor with such distribution as at present.

While Linn County was working to clear up the last of its most resistant cases in 1949, Calhoun County found itself faced with the problem of 120 cases. The great majority of them were among school and pre-school children in the Lake City school district where the number of cases made it necessary to form a special ringworm clinic, supervised by physicians and staffed by two nurses. This six-day-a-week clinic was continued for six months and severely taxed the funds of the community. In the fall of 1950 Oskaloosa, in Mahaska County, found itself faced with a similar sized epidemic. Management of these cases was patterned after the style of the Lake City Clinic which had proved quite satisfactory.

Alerted by the high incidence of the disease in neighboring Mahaska County, Poweshiek county began an examination of its school children. As a result an epidemic of threatening proportions was nipped when about 30 early cases were found in the Montezuma school. These, all early cases, are being cared for by the four physicians in the town. Grinnell, also in Poweshiek County, has examined all of its grade school children and found none with ringworm infection. Pella and Bussey in Marion County, may similarly be credited with an epidemic prevention program. A total of nine early cases, undetectable without the Wood light, were found in those two areas. Allamakee County is also snipping what might have become a full-blown epidemic. Routine examination of rural school children in Scott County now includes the use of Wood lights which have revealed two early cases of the disease.

With such widespread distribution of ringworm of the scalp in Iowa schools, nurses must add examination of the hair and scalp with the Wood light to their routine examinations. This procedure alone will discover the early case. By the time two or three youngsters have attacks far enough advanced that the infection can be detected by the eye, the

disease has usually become pretty widespread in the group.

We find good community cooperation in the ringworm detection program and in the case of the detected cases. Schools are accepting their share of the responsibilities of the program. Some are also beginning to buy the Wood light for the nurse. The nurse makes it plain that she is not acting as a diagnostician but is finding suspicious cases which must be seen by the physician for diagnosis. Parents, when given initial instructions that immediate cures are not to be expected, show an amazing amount of patience either in pulling hairs from an encircled area or in washing the white caps. Even the little girls who become the occasional victims (perhaps seven boys to one girl) do not object to having a few locks of hair cut. However, they prefer to cover their hair with a scarf than to wear the football helmet type of hair covering the boys wear.

Instructions for control of ringworm of the scalp may be obtained from the Division of Preventable Diseases, Iowa State Department of Health, Des Moines.

CONGENITAL SYPHILIS

Just one year ago Dr. Theodore J. Bauer, Medical Director, Chief, Division of Venereal Diseases, U. S. Public Health Service, dropped a bomb in medical circles with an editorial on congenital syphilis in the September, 1949, *Journal of Venereal Disease Information*. In this editorial he pointed out that during the past few years with the introduction of penicillin in the treatment of syphilis, increased activity in case-finding and treating, our incidence of congenital syphilis remained constant. If more and more syphilitic women are being treated during pregnancy and if the incidence of syphilis is decreasing, surely the number of congenital syphilis cases should decrease. "Further," says Doctor Bauer, "only one-fourth of the congenital syphilis cases are being found in the first year of life." Not wanting to accept this last statement, careful studies were done on any diagnosed congenital syphilis case and it was found that all of these cases not diagnosed until later ages had had opportunities for diagnosis. They had all been to family doctors, to clinics, to dentists or had received services from public health nurses.

The first part of the problem revolves around the case finding and treatment of women of the child bearing age. To be successful we must find every

pregnant woman with syphilis early in the course of her pregnancy. In order to accomplish this, mothers themselves must be educated continuously to the great necessity of blood tests as a routine part of prenatal care of every pregnancy. Public appeal program must be presented to reach large numbers of people so that the mother herself can be taught the necessity of a blood test. Likewise, the general practitioner and obstetrician must be interested in not only his own patients, but in all the patients in his area. The Maternal and Child Health Committee and the Venereal Disease Committee of the Iowa State Medical Society must work together to study the problem and through their cooperation establish refresher courses for the profession. Research workers recommend that we no longer consider one blood test in pregnancy adequate, but rather one test early in the pregnancy and one the latter part of the third trimester should be the procedure. If a woman comes to delivery having received no prenatal care, a blood test must be taken immediately upon admission. When this occurs the physician must make sure that the hospital is equipped to give immediate service or should send the blood to a laboratory where reports may be returned rapidly.

Whenever a pregnant woman is found with syphilis she must be considered a medical emergency and treatment should be instituted at once even if there are but a matter of hours before delivery. Ability to pay for medical service should be of no concern in the treatment of these cases as every state has provisions for providing care for venereal patients or to maternity patients.

The second approach to this problem is in establishing methods for early diagnosis of syphilis in babies. Any child born of a syphilitic mother, whether her syphilis has been treated or not, must have repeated blood tests. One test, whether it is positive or negative, is not indicative of the presence or absence of syphilis. It has been firmly established that cord blood is not satisfactory for testing. Repeated tests will show whether or not the titer of the blood is increasing or decreasing. If the titer is decreasing, it may mean that the child is not congenitively syphilitic. If the blood tests remain negative over a minimum of four months, it is extremely unlikely that the child has congenital syphilis. We cannot help but feel that the difficulties met in taking venous blood from a baby has no doubt played a great part in failure of doctors to keep a suspicious child under constant supervision. We also feel that the use of cord blood as the only means of diagnosis has resulted in failure to discover syphilitic children. At the present time we have available the filter paper microscopic test which promises to be satisfactory and which will eliminate the problem of puncturing a tiny vein. It is felt that the filter paper method test is accurate enough for general use. It is not quite as sensitive as volumetric tests,

but in the case of congenital syphilis this is not undesirable as a congenital syphilitic usually runs a high titer. It must be remembered that as yet the filter paper method is not acceptable for legal tests and cannot be accepted for premarital or prenatal blood tests. For a complete follow-up on these children we heartily recommend that the practicing physician enlist the assistance of public health or county nurses in their area. These nurses can be of great assistance in teaching the parents and encouraging them to return for re-examination and interpreting the doctor's findings to the parents.

To summarize a few figures from our own state, in 1933, Iowa had .5 infants per thousand live births born with syphilis. This has dropped steadily to less than .1 per thousand live births in 1947. In spite of our steady drop in the number of cases of syphilis reported, we have had no appreciable drop in the percentage of tests found positive in the pre-marital and prenatal blood testing programs. From July 1, 1948 to July 1, 1950, a period of 24 months, there was a total of 3,989 cases of syphilis reported in Iowa. Two hundred and seven, or roughly five per cent of these were congenital cases. One hundred and fifty-nine of these congenital cases were reported by private physicians. Since January 1, 1950, the cases of congenital syphilis have been reported by age group so that we have ages on the congenital syphilis reported in the last eight months. During this period a total of 73 cases of congenital syphilis have been reported. Age was not given in three cases. Eight cases were under one year of age and 62 were one year of age or over before being reported. Here we have concrete evidence that only ten per cent of the cases in Iowa were being diagnosed under the age of one year. Although this seems like a small number, we should all concentrate our efforts and strive to completely eradicate this one disease from our infant morbidity.

DIPHTHERIA

With the year' reports nearly completed, Iowa physicians have notified us of 24 diphtheria cases and three carriers. Thus the pattern of decreasing incidence for the disease continues. The numbers of reported diphtheria cases by year since 1930 are as follows:

Year	Cases	Year	Cases	Year	Cases	Year	Cases
1930	412	1935	599	1940	190	1945	226
1931	509	1936	289	1941	199	1946	187
1932	657	1937	179	1942	187	1947	100
1933	563	1938	395	1943	156	1948	60
1934	415	1939	305	1944	203	1949	32
						(tentative) 1950	24

We particularly notice the advanced ages of the reported cases. In 1949 five were listed as being above 50. The oldest was 66. Of those with stated age the oldest for 1950 was 59. Our oldest aged case for any recent year was 75 (case reported in 1942). The custom of discontinuing diphtheria immunizations

after the child reaches school age probably accounts for the increased percentages of patients in the older age brackets.

Ages	1941-147 Cases With Stated Age	1948-32 Cases With Stated Age	1949-32 Cases With Stated Age	1950-12 Cases With Stated Age	Totals	Per Cent of Total
Less than 1 year	0	0	1		1	.45
1 to 2 years	3	1	0		4	1.6
2 to 3 years	6	3	1	1	11	4.9
3 to 4 years	5	1	3		9	4.0
4 to 5 years	12	1	1		14	6.4
5 to 9 incl.	27	6	4		37	16.5
10 to 14 incl.	21	2	4	3	30	13.2
15 to 19 incl.	19	6	1	4	30	13.2
20 and over	54	12	17	4	87	38.5
Total					223	

The above chart showing the age groups for the reported cases of 1941, 1948, 1949 and 1950, indicates the pattern of advanced case age established by 1941 continues to date. Of epidemiologic significance is the fact that persons in age groups over five years

do not retain sound immunity from injections received in infancy. Since adult immunizations are impractical our mode of attack must be to continue booster injections further into the grade school period.

DIPHTHERIA CASES BY COUNTIES FOR 1950

County	Cases	County	Cases
Black Hawk	3	Harrison	2
Carroll	2 (plus 3 adult carriers)	Linn	2
Clinton	1	Lyon	2
Davis	1	Polk	1
Dubuque	3	Scott	1
Floyd	2	Sioux	1
Hamilton	2	Webster	1
Total			24 (tentative)

The 1950 cases (24 cases from 14 counties) show no evidence of epidemic rates in any area of the state as the years prior to 1948 did. However, the distribution does indicate that diphtheria can appear almost anywhere in Iowa.

MORBIDITY REPORT

Disease	Dec., 1950	Nov., 1950	Dec., 1949	Most cases reported from these counties:
Diphtheria	3	2	11	Dubuque (1), Hamilton (2)
Typhoid Fever	3	0	3	Pottawattamie, Van Buren, Wayne
Scarlet Fever	73	30	81	Clinton, Grundy, Washington
Smallpox	0	0	0	Black Hawk, Des Moines, Linn
Measles	16	17	478	Cerro Gordo, Ida, Boone
Whooping Cough	42	101	27	Scattered—only 1 or 2 cases to a county
Brucellosis	52	8	12	Delaware, Des Moines, Johnson
Chickenpox	280	103	352	Clinton, Hamilton, Linn
Influenza	0	0	80	Boone, Des Moines, Linn
Meningitis Men.	3	1	2	Polk, (3) others scattered
Mumps	164	59	240	Clinton, Des Moines, Fayette, Lyon
Pneumonia	13	7	6	Webster (7), others scattered
Poliomyelitis	70	109	48	For the State
Rabies in Animals	33	13	17	For the State
Tuberculosis	96	66	58	For the State
Gonorrhea	65	56	49	
Syphilis	167	138	173	

ROSTER OF IOWA PHYSICIANS IN MILITARY SERVICE

As of January 15, 1951

Alberts, M. E., Des Moines
(Des Moines)Lt. (jg), U.S.N.R.
Allen, M. B., Fort Dodge
(Fort Riley, Kan.)Capt., A.U.S.
Bartholomew, R. D., Lake City
(Oakland, Calif.)U.S.N.R.
Bartley, R. L., Sully
(Pensacola, Fla.)U.S.N.R.
Bliss, W. R., Ames
(Chicago, Ill.)Capt., A.U.S.
Camp, J. R., Thompson
(San Diego, Calif.)U.S.N.R.
Carson, R. W., Winterset
(Camp Stoneman, Calif.)A.U.S.
Johnson, F. N., Madrid
(San Antonio, Texas)1st Lt., A.U.S.
Johnson, M. H., Iowa City
(Tacoma, Wash.)Capt., A.U.S.

McCrary, W. A., Lake City
(Fort Riley, Kan.)1st Lt., A.U.S.
Mitchell, R. C., Iowa City
(San Antonio, Texas)1st Lt., A.U.S.
Montgomery, A. E., Jefferson
(Pittsburg, Calif.)Lt. Col., A.U.S.
Robb, W. J., Cedar Rapids
(San Diego, Calif.)U.S.N.R.
Smith, C. B., Iowa City
(Fort Sam Houston, Texas)A.U.S.
Smith, H. J., Des Moines
(Des Moines)Lt. Comdr., U.S.N.R.
Tempel, P. F., Steamboat Rock
(Fort Riley, Kan.)A.U.S.
Thornton, T. F., Jr., Waterloo
(Great Lakes, Ill.)Lt., U.S.N.R.
von Lackum, L. F., Oelwein
(Oakland, Calif.)Lt. (jg), U.S.N.R.
Wehrmacher, W. H., Iowa City
(Oceanside, Calif.)U.S.N.R.
*Wilkins, D. S., Iowa City
(APO San Francisco, Calif.)Capt., A.U.S.

*Deceased

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

ADVANCES IN INTERNAL MEDICINE, edited by William Dock, M.D., Long Island College of Medicine, Brooklyn, N. Y.; and Isidore Snapper, M.D., Mount Sinai Hospital, New York. The Year Book Publishers, Inc., Chicago, 1950. Price \$10.00.

CHILD PSYCHIATRY IN THE COMMUNITY, by Harold A. Greenberg, M.D., Senior Staff Psychiatrist, Institute for Juvenile Research, Chicago, Assistant Professor of Criminology, College of Medicine, University of Illinois, Chicago; in collaboration with Julian H. Pathman, Ph.D., Chief Psychologist, Downey Veterans Administration Hospital, Downey, Ill., formerly assistant Professor of Psychiatry and Psychology, Illinois Neuropsychiatric Institute, College of Medicine, University of Illinois, Chicago, formerly senior Staff Psychologist, Institute for Juvenile Research, Chicago; Helen A. Sutton, R.N., B.A., B.S., formerly Psychiatric Nursing Instructor, Illinois Neuropsychiatric Institute, College of Medicine, University of Illinois, Chicago; Marjorie M. Browne, B.A., M.A., Instructor, School of Social Service Administration, University of Chicago. G. P. Putnam's Sons, New York, 1950. Price \$3.50.

METHODS IN MEDICINE, (The Manual of the Medical Service of George Dock, M.D., Sc.D., formerly Professor of Medicine, Washington University School of Medicine, formerly Physician-in-chief, Barnes Hospital, St. Louis) by George R. Herrmann, M.D., Ph.D., Professor of Medicine, University of Texas Medical Branch at Galveston, Director of the Cardiovascular Service and Heart Station, University of Texas Hospitals, Consultant in Medicine to the Surgeon General, United States Army, Consultant in vascular diseases to the Marine Hospital, U. S. P. H. S. The C. V. Mosby Co., St. Louis, 1950. Price \$7.50.

PSYCHOLOGY OF THE EYE, by Francis H. Adler, M.D., F.A.C.S.; William F. Norris, and George E. deSchweinitz, Professor of Ophthalmology, School of Medicine, University of Pennsylvania and Consulting Surgeon, Wills Hospital, Philadelphia. The C. V. Mosby Co., St. Louis, 1950. Price \$12.00.

PSYCHOSOMATIC MEDICINE, by Franz Alexander, M.D., Director of Chicago Institute for Psychoanalysis; Clinical professor of Psychiatry, University of Illinois. W. W. Norton and Co., New York, 1950. Price \$4.50.

RECENT ADVANCES IN NUTRITION WITH PARTICULAR REFERENCE TO PROTEIN METABOLISM, by Paul R. Cannon, Ph.D., M.D., Chairman of the Department of Pathology, University of Chicago; in collaboration with Earl P. Benditt, M.D.; Laurence E. Frazier, M.D.; Eleanor M. Humphreys, M.D.; H. C. Steffee, M.D.; Robert W. Wissler, M.D. and R. Woolridge, M.D. The University of Kansas Press, Lawrence, Kansas, 1950. Price \$2.00.

WHEN MINDS GO WRONG, A Simple Story of the Mentally Ill—Past, Present and Future, by John M. Grimes, M.D., Published by the author, Chicago, 1949. Price \$5.00.

THE 1950 YEAR BOOK OF GENERAL SURGERY (July, 1949-June, 1950), edited by Everts A. Graham, A.B., M.D., Professor of Surgery, Washington University School of Medicine, Surgeon-in-chief of the Barnes Hospital and Children's Hospital, St. Louis; with a section on anesthesia edited by Stuart C. Allen, M.D., Professor of Surgery and Chairman of Division of Anesthesiology, State University of Iowa College of Medicine and Hospitals. The Year Book Publishers, Inc., Chicago, 1950. Price \$5.00.

THE 1950 YEAR BOOK OF OBSTETRICS AND GYNECOLOGY (August, 1949-July, 1950, edited by J. P. Greenhill, B.S., M.D., F.A.C.S., Professor of Gynecology, Cook County Graduate School of Medicine; Attending Gynecologist, Cook County Hospital; Attending Obstetrician and Gynecologist, Michael Reese Hospital; Associate staff, Chicago Lying-In Hospital; The Year Book Publishers, Inc., Chicago, 1950. Price \$5.00.

BOOK REVIEWS

CLINICAL BIOCHEMISTRY, by Abraham Cantarow, M.D., and Max Trumper, Ph.D. (W. B. Saunders Co., Philadelphia, \$8.00).

The physician is daily called upon to apply in his practice the fundamentals of practical biochemistry and an understanding of normal and pathologic physiology. As the authors state in the preface, "in order to take full advantage of the findings of the biochemist, the clinician must have a full understanding of the significance and the limitations of the results of laboratory investigation."

Cantarow and Trumper cover the field of clinical biochemistry and physiology as it applies to medical practice, correlating the established facts with problems in everyday medicine. The normal physiology is first discussed, and then aberrations due to pathologic conditions are considered. The bases of various laboratory tests are explained. A feature of considerable value is the author's estimation of the degree of reliability of laboratory methods.

The book is a mine of information, well printed, adequately illustrated and can be recommended as a reference text. However, it is regrettable that ponderous sentence structure, at times unnecessarily, confounds the reader.—A. L. Jenks, M.D.

THE PHYSIOLOGY OF THOUGHT—A FUNCTIONAL STUDY OF THE HUMAN MIND IN ACTION, by Harold Bailey, M.D. (William-Frederick Press, New York, \$3.75).

This book constitutes a readable and comprehensive discussion of what might be also called the "Physiology of Mind." It is quite within the mental scope of both lay and medical readers.—F. A. Ely, M.D.

THE 1949 YEARBOOK OF ENDOCRINOLOGY, METABOLISM AND NUTRITION (December, 1948-January, 1949), by Willard O. Thompson, M.D., and Tom Spies, M.D. (Year Book Publishers, Inc., Chicago, \$4.75).

This book is the usual well-prepared, compact review of the literature for the year 1949 in the subjects mentioned in its title that has made the Yearbook publications so valuable to the busy practitioner. Of interest to all will be the pointed discussions of the editors.

The section on ACTH covers the subject to the end of 1949 and is well worth the reading. The many, varied and sometimes appealing ideas in endocrinology are well represented. The section on nutrition demonstrates the rapid strides that science is making. The book should be of interest to practitioners of all branches of medicine.—M. S. Mark, M.D.

PHYSIOLOGY IN DISEASES OF THE HEART AND LUNGS, by M. D. Altschule, M.D. (Harvard University Press, Cambridge, Mass., \$5.00).

This review of physiology and diseases of the heart and lung serves a good purpose. It is remarkably recent for a text, most of them being at least five years behind the current literature. References in this book are as recent as 1948, although most of them are not beyond 1946 and 1947. The desire of the author is to give a quick summarization of current thinking on all of the subjects which are pertinent to this book. The references available are adequate and serve as a convenient spring-board for further investigation.

This book should be of unusual value for any individual who does any teaching or participates in any teaching program. Each subject is covered briefly and without any evidence of prejudice toward certain concepts when the area of thought is controversial. The subject of cardiac asthma, as an example, is covered in 13 pages. Cyanosis is discussed in two pages. There is no discussion of electrocardiography which seems reasonable considering the size and convenience of the book.

References are made at the end of each section so that it is not necessary to go through a voluminous list each time. They are listed alphabetically and the reference in the discussion is in each case listed by the name of the author contributing the information with the date of the publication so there is no difficulty in finding the original source.

There is little "clinical" material in this book. For that reason it may be of even greater practical value than those discussions which aim only at the superficial therapeutic problems without trying to describe the dynamics involved. The book is generally recommended.—*H. Margulies, M.D.*

THE PHYSICIAN EXAMINES THE BIBLE, by C. Raimer Smith, M.D. (Philosophical Library, New York, \$4.25).

Dr. Smith has made a hobby of the study of the Bible. This book compiles his impression of many controversial subjects including the use of alcoholic liquors, faith healing, evolution and other scientific theories. Medical subjects, as found in the Bible, are classified with most complete concordance references. Any physician desiring to own a reference book on this subject will find this volume most satisfactory.—*E. M. George, M.D.*

REGIONAL DERMATOLOGIC DIAGNOSIS, by Ervin Epstein, M.D. (Lea and Febiger, Philadelphia, \$6.00).

Each chapter in this useful little book discusses the skin lesions which more commonly affect a special part of the body, as the head, the neck and the trunk. Since many diseases attack many parts of the body, because of the above method, there is much repetition. This, however, is an advantage rather than a disadvantage. The reader does not have to refer to other parts of the book since each time a disease is mentioned, it is discussed rather fully.

This book is meant for the non-dermatologic practitioner. When he refers to it, his information is readily available, and it is likely that he would refer to it at a time when he wants his information quickly and easily.

The descriptions are clear and concise. The advice regarding therapy is especially good. Too often textbooks on dermatology enumerate many prescriptions

which lead the non-dermatologist to over-treat his patient's skin disease. The prescriptions listed here are safe and suitable. This is a good book for easy reference, for the busy non-dermatologist.—*S. Greenhill, M.D.*

WILLIAMS OBSTETRICS, by Nicholson J. Eastman (Appleton-Century-Crofts, Inc. New York).

For many of us, who studied obstetrics from *Williams Obstetrics*, the new edition by Dr. Eastman of Johns Hopkins Medical School is a special surprise. With the exception of the typical William's style, print and some of the pictures, the resemblance to the previous editions is almost unnoticeable. This edition is for the general practitioner, student and specialist and can easily be considered as a general reference book in obstetrics.

Of the many changes that have been made by Dr. Eastman the most noticeable are the numerous illustrations and explicit pictures, which follow the text closely. Most of the historical material has either been removed or is easily identified by the use of small print. This proves advantageous when one is searching for specific information for one's immediate needs and also affords one the opportunity to read the less urgent material at a later date.

The treatment of various conditions are given with clarity and in such a manner that one learns of all the methods of treatment. Yet, after reading these methods, one knows which of these, the editor thinks, in his experience, to be the most gratifying. This leaves the reader with a sense of individuality after reading this edition.

This book gives the student enough basic fundamentals for him either to go on to a residency or to go into general practice. The reader will find an abundance of new material each time that he reads or studies the chapters on the abnormalities of pregnancy, labor and the puerperium. For one who is interested in obstetrics, this edition should be on the must list of reference books.—*C. R. Montz, M.D.*

ARTHRITIS AND RELATED CONDITIONS, edited by Theodore F. Bach, M.D. (F. A. Davis Co., Philadelphia, \$6.50).

This book has been prepared primarily to assist the general practitioner in an understanding of the problem of arthritis, its various phases and methods of treatment. Considerable effort has been taken to evaluate the various types of treatment commonly used, including a supplement on the use of cortisone. Numerous excellent illustrations enhance the value of the text. Every physician will find information included in this book which will clarify the problems associated with this disabling condition.—*E. M. George, M.D.*

REGIONAL ORTHOPEDIC SURGERY, by Paul C. Colonna, M.D. (W. B. Saunders Co., Philadelphia, \$11.50).

Dr. Colonna is to be congratulated for compiling, in book form, his understanding of orthopedic surgery from a regional approach. By drawing upon his teaching notes, the author has been able to explain common clinical conditions in a most satisfactory manner. The text is interspersed with good illustrations. This volume should take its place among the textbooks on orthopedic surgery as most helpful to medical students, specialists and general practitioners alike.—*E. M. George, M.D.*

SOCIETY PROCEEDINGS

MEETINGS

Butler

The annual turkey dinner and election of officers of the Butler County Medical Society was held November 20 in Clarksville. The following officers were elected for 1951: president, Dr. Melchior D. Enna, Dumont; vice-president, Dr. Hugh G. MacLeod, Greene and secretary-treasurer, Dr. Frank F. McKean, Allison.

Carroll

Dr. Roland B. Morrison, Carroll, was recently elected president of the Carroll County Medical Society for 1951. Other officers chosen are: vice-president, Dr. A. Reas Anneberg, Carroll and secretary-treasurer, Dr. James M. Tierney, Carroll.

Cass

The Cass County Medical Society recently elected Dr. Walter F. Giegerich, Atlantic, president for 1951. Other officers elected were: vice-president, Dr. John F. Moriarty, Atlantic and secretary-treasurer, Dr. Ralph H. Moe, Griswold.

Cerro Gordo

Dr. Egmont H. Barg, Mason City, was elected 1951 president of the Cerro Gordo County Medical Society at its monthly dinner meeting December 12. Other officers are: vice-president, Dr. Sidney Brownstone, Clear Lake; secretary, Dr. George I. Tice, Mason City and treasurer, Dr. James W. Lannon, Mason City.

Cherokee

The Cherokee County Medical Society met December 12 at the Sioux Valley Hospital in Cherokee. The following officers were elected for 1951: president, Dr. Willard C. Brinegar, Cherokee; vice-president, Dr. Charles L. Seaman, Cherokee and secretary, Dr. Donald C. Koser, Cherokee.

Chickasaw

The annual dinner and business meeting of the Chickasaw County Medical Society was held December 4 in Nashua. Dr. Arlo L. Murphey, Fredericksburg, was elected president, and Dr. John J. Ahrens, New Hampton, was elected secretary.

Clinton

Clinton County Medical Society officers for 1951 were elected at a dinner meeting December 20 in Clinton. Officers elected were: president, Dr. George M. Ellison, Clinton; vice-president, Dr. Wil-

liam H. Presnell, Charlotte and secretary-treasurer, Dr. Edgar O. Hicks, Clinton.

Dubuque

Dr. Arthur G. Plankers, Dubuque, was elected president of the Dubuque County Medical Society at the annual meeting held in Dubuque December 12. Others elected were: first vice-president, Dr. Anthony M. Loes, Dubuque; second vice-president, Dr. Charles C. Griffin, Dyersville; secretary, Dr. Robert J. McNamara, Dubuque and treasurer, Dr. Henry G. Langworthy, Dubuque.

Grundy

The Grundy County Medical Society met December 21 at the courthouse in Grundy Center. Dr. Otis Wolf, Marshalltown, spoke on medical problems and socialized medicine.

Harrison

Dr. Francis X. Tamisiea, Missouri Valley, was recently elected president of the Harrison County Medical Society. Dr. Albin C. Bergstrom, Missouri Valley, was elected secretary.

Jasper

Dr. John R. Singer, Newton, was recently elected president of the Jasper County Medical Society. Dr. Robert J. Saunders, Colfax, was elected vice-president and Dr. Lloyd H. Koelling, Newton, was elected secretary-treasurer.

Johnson

The Johnson County Medical Society met January 3 at the Hotel Jefferson in Iowa City. Dr. Stuart C. Cullen of the Division of Anesthesiology, University Hospitals, spoke on "Medical Practice in Denmark."

Lee

The Lee County Medical Society held its December meeting in Fort Madison. Dr. Benjamin D. Van Werden, Keokuk, was elected president for 1951. Other new officers are: vice-president, Frank L. Lyman, Jr., Fort Madison and secretary-treasurer, Dr. Walter B. Kasiske of Keokuk.

Pocahontas

Dr. Edward O. Loxterkamp, Rolfe, was elected president of the Pocahontas County Medical Society at its meeting held in Pocahontas December 14. Other officers for 1951 are: vice-president, Dr. John B. Thielen, Fonda and secretary-treasurer, Dr. Charles L. Jones, Gilmore City.

Polk

The annual meeting of the Polk County Medical Society was held January 17 at the Hotel Savery in Des Moines. Dr. Stanley W. Olson, dean of the University of Illinois College of Medicine, spoke on "Medical Education in Time of National Emergency."

Pottawattamie

Dr. J. Donald Hennessy, Council Bluffs, was elected president of the Pottawattamie County Medical Society at its meeting December 19 at the Hotel Chieftain in Council Bluffs. Other officers elected are: vice-president, Dr. Russell W. Blanchard, Council Bluffs and secretary-treasurer, Dr. Arthur M. Pedersen, Council Bluffs.

Scott

The Scott County Medical Society met January 2 at the Outing Club in Davenport. The following officers were elected for 1951: president, Dr. Paul A. White; president-elect, Dr. Preston E. Gibson; vice-president, Dr. Walter J. Balzer; secretary, Dr. Harry B. Weinberg and treasurer, Dr. F. Dale Wilson. All are from Davenport. The speaker during the dinner-program was Dr. Mynie G. Peterman, Milwaukee, who discussed "Treatment of Epilepsy in Children."

Washington

The Washington County Medical Society elected Dr. Charles W. Beckman, Kalona, as president for 1951 at the annual business meeting December 14 in Washington. Dr. Truman M. Mast, Washington, was elected vice-president, and Dr. William S. Kyle, Washington, was elected secretary-treasurer.

Winneshiek

Dr. Reinert N. Svendsen, Decorah, was elected president of the Winneshiek County Medical Society for 1951 at the annual election held December 14 at the Green Parrot in Decorah. Other officers elected include: vice-president, Dr. Joseph W. Holtey, Ossian and secretary-treasurer, Dr. Leo C. Kuhn, Decorah.

PERSONALS

Dr. Kenneth N. Andersen began the practice of medicine in Center Point February 1. Dr. Andersen is a graduate of Johns Hopkins Medical College in Baltimore and served his internship at the University Hospitals in Iowa City.

Dr. Ralph A. Dörner of Des Moines spoke on "Carcinoma of the Lung" at the December 14 meeting of the Carroll County Medical Society at Carroll.

Dr. Thurman K. Leonard, formerly of Panora, recently began the practice of medicine in Madrid. A 1946 graduate of the SUI College of Medicine,

he served his internship at the Methodist Hospital in Des Moines.

Dr. Carl C. Magdsick, Jr., has begun the practice of medicine in Charles City. His practice is limited to anesthesia. A 1943 graduate of the University of Chicago School of Medicine, he recently completed training at the Veterans Hospital in Des Moines and the SUI University Hospitals.

Dr. Loran M. Martin, widely-known Fort Dodge ear, nose and throat specialist, retired from practice January 1.

Dr. James H. Maynard, Shelby, spoke on "Cancer and Its Control" to members of the Missouri Valley Kiwanis Club December 12.

Dr. Glenn E. Ross, formerly of Harlan, left recently to spend three years of residency at the Indianapolis General Hospital where he will study radiology.

DEATH NOTICES

Dr. Frank Elmer Boyd, 83, Colfax physician for more than 50 years, died following a heart attack at his home December 19. Born in Colfax, he was a 1893 graduate of the State University of Iowa College of Medicine and had practiced in Little Sioux before returning to Colfax. Dr. Boyd was a life member of the Jasper County and Iowa State Medical Societies.

Dr. William John K. Findley, 91, formerly of Sac City, died December 10 at a Sioux City hospital shortly after suffering a broken hip in a fall. Dr. Findley had been in failing health for some time and an invalid for several years. Born in Atlantic, he was a graduate of the Northwestern University Medical School, Chicago in 1904. Dr. Findley was a life member of the Sac County and Iowa State Medical Societies.

Dr. Henry Albert Meyers, 61, Davenport physician, died December 27 following a heart attack. Dr. Meyers, a 1915 graduate of the St. Louis University School of Medicine, had practiced in Davenport since 1920. He was a member of the Scott County and Iowa State Medical Societies.

Dr. Velura Elma Powell, 76, Red Oak physician and co-founder of the Powell School for Backward Children, died December 21 following a heart attack. A 1902 graduate of the University of Michigan Medical School, Ann Arbor, Dr. Powell retired from active practice in 1943. Dr. Powell was a life member of the Montgomery County and Iowa State Medical Societies.

Dr. Frederick Conrad Schadt, 66, practicing physician in Williamsburg for more than 30 years, died December 12 following a stroke at home. Born in Amana, Dr. Schadt was graduated from the State University of Iowa College of Medicine in 1903. He was a member of the Iowa County and Iowa State Medical Societies.

The JOURNAL

of the

Iowa State Medical Society

Vol. XLI

DES MOINES, IOWA, MARCH, 1951

No. 3

IOWA STATE MEDICAL SOCIETY

Organized in 1850

One Hundredth Meeting

Sioux City, Iowa, April 23-25, 1951

Municipal Auditorium

★

Program of General Sessions

Monday Afternoon, April 23

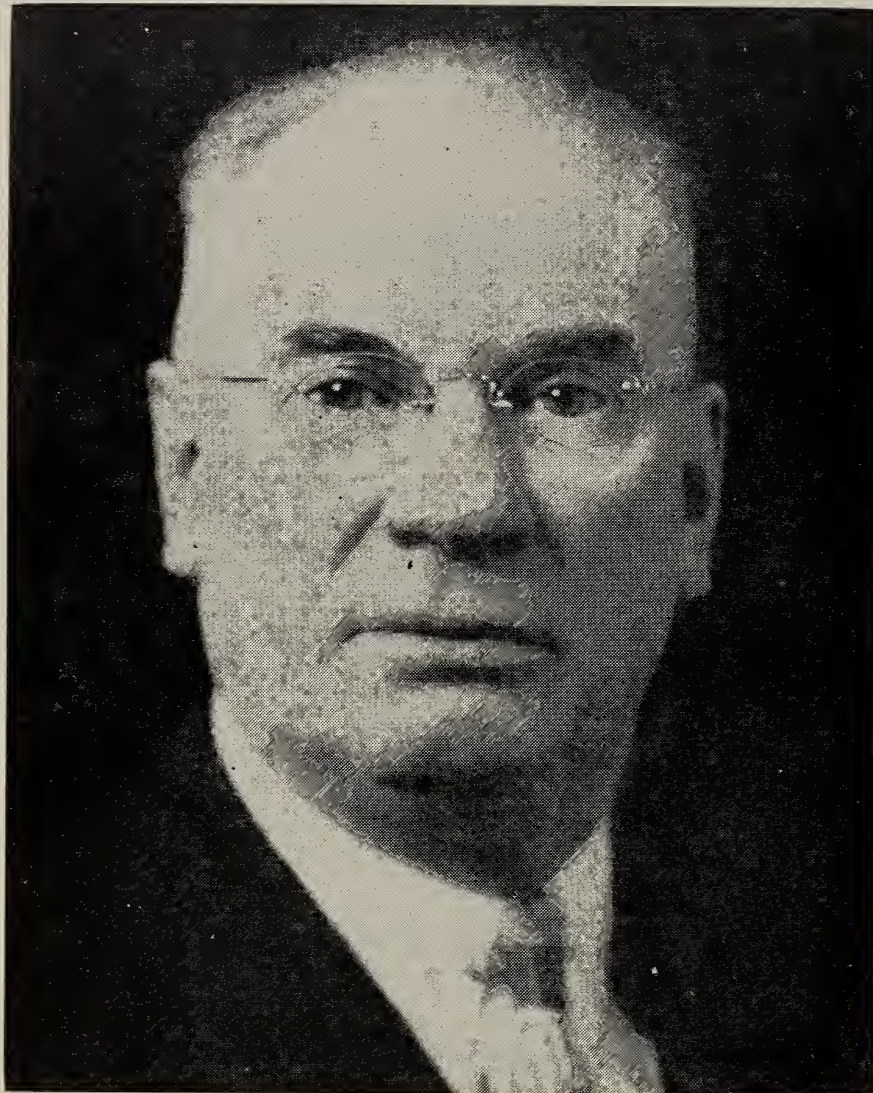
Main Arena

- 1:30. Greetings—
FRANK D. MCCARTHY, M.D., President, Woodbury County Medical Society
Response—
GEORGE H. SCANLON, M.D., First Vice-President, Iowa State Medical Society
- 1:45. The Use of Cortisone in Rheumatic Diseases
EMMERSON WARD, M.D., Mayo Clinic, Rheumatic Division, Rochester
- 2:30. Cancer of the Breast—Diagnosis and Selection of Treatment
LOUIS P. RIVER, M.D., Associate Clinical Professor of Surgery, Stritch Medical School of Loyola University, Chicago
- 3:00. Intermission to visit exhibits
- 3:15. Resection in the Treatment of Pulmonary Tuberculosis
CHARLES W. GRAY, M.D., Oakdale Sanatorium, Oakdale
- 3:45. Lesions of the Common Duct
WALTMAN WALTERS, M.D., Mayo Clinic, Rochester

Tuesday Morning, April 24

Main Arena

- 9:00. Present Status of Treatment of Diseases of the Thyroid Gland
GEORGE CRILE, JR., M.D., Cleveland
- 9:45. X-Ray in the Diagnosis of Lesions of the Gastrointestinal Tract in Children
EDWARD B. D. NEUHAUSER, M.D., Children's Medical Center, Boston
- 10:30. Intermission to visit exhibits
- 10:45. Common Surgical Lesions of the Breast
JOHN W. CLINE, M.D., President-elect, American Medical Association, Associate Clinical Professor of Surgery, Stanford University School of Medicine, San Francisco
- 11:30. Treatment of Bulbar Poliomyelitis as a Respiratory Problem
THOMAS C. GALLOWAY, M.D., Associate Professor of Otolaryngology, Northwestern University Medical School



THOMAS F. THORNTON, M.D.
President
Iowa State Medical Society
1950-1951

Program of General Sessions

Wednesday Morning, April 25

- 9:30. The Present Status of Psychiatry in Iowa
WILBUR R. MILLER, M.D., Professor of Psychiatry,
State University of Iowa College of Medicine,
Iowa City
- 10:00. Care of the Postpartum Woman
NORMAN F. MILLER, M.D., Professor of Obstetrics
and Gynecology, University of Michigan Med-
ical School, Ann Arbor

10:30. Intermission to visit exhibits

10:45. Severe Injuries to the Hand
WALTER C. GRAHAM, M.D., Santa Barbara

11:15. Sudden Death
WILLIAM B. BEAN, M.D., Professor of Internal
Medicine, State University of Iowa College
of Medicine, Iowa City

11:45. Report of House of Delegates and Installation
of President

Program of Section Meetings

MEDICAL SECTION

EUGENE B. FLOERSCH, M.D., Council Bluffs,
Chairman

Tuesday Afternoon, April 24

Main Arena

- 1:30. Current Trends in the Use of Cortisone in Rheu-
matoid Arthritis
EMMERSON WARD, M.D., Rochester
- 2:00. Some Physiologic Effects of Thoracolumbar Sym-
pathectomy in Arterial Hypertension
JAMES W. CULBERTSON, M.D., Iowa City
- 2:30. Antabuse and Conditioned Reflex in the Treat-
ment of Alcoholism
WILLIAM E. ASH, M.D., and JAMES D. MAHONEY,
M.D., Council Bluffs
- 3:15. Intermission to visit exhibits
- 3:30. Some Observations on the Management of the
Patient with Stroke
JOHN T. BAKODY, M.D., Des Moines
- 4:00. Spontaneous Hypoglycemia
ROBERT P. HARDWIG, M.D., and CHRISTIAN E.
SCHROCK, M.D., Waverly

Wednesday Afternoon, April 25

- 1:30. Problems in the Management of Diabetes
THOMAS L. CARR, M.D., Iowa City
- 2:00. New Developments in the Therapy of Essential
Hypertension
WALTER M. KIRKENDALL, M.D., Iowa City
- 2:30. Treatment of Subacute Bacterial Endocarditis
LEWIS E. JANUARY, M.D., Iowa City
- 3:00. Intermission to visit exhibits
- 3:15. Liver Disease
MURRAY FRANKLIN, M.D., Iowa City
- 3:45. Diagnosis and Management of Chronic Periph-
eral Arterial Insufficiency
HAROLD N. NEU, M.D., Omaha

EYE, EAR, NOSE AND THROAT SECTION

JOSEPH E. DVORAK, M.D., Sioux City,
Chairman

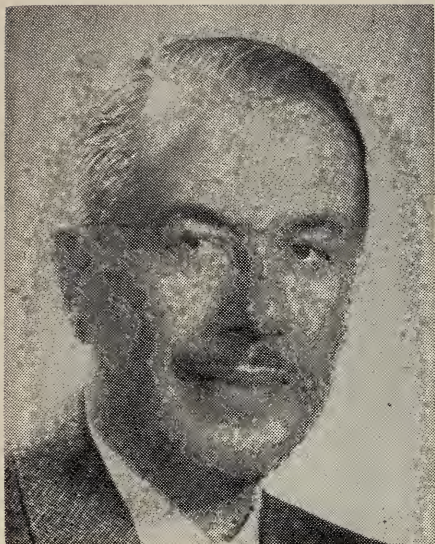
Tuesday Afternoon, April 24

Northwest Room, First Floor Auditorium

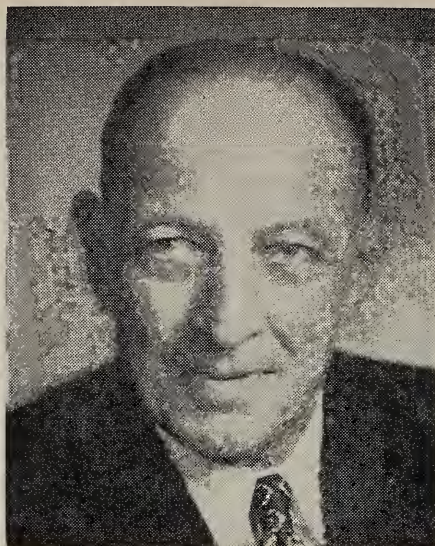
- 1:30. Some Phases of Respiratory Obstruction and
Their Secondary Effects -
THOMAS C. GALLOWAY, M.D., Evanston
- 2:00. Respiratory Difficulties in the Newborn as Re-
lated to Otolaryngology
RALPH C. CARPENTER, M.D., Marshalltown
- 2:30. Tracheotomy: Indication for and Postoperative
Treatment
BYRON M. MERKEL, M.D., Des Moines
- 3:00. Intermission to visit exhibits
- 3:15. Congenital Cyst of the Nasal Dorsum
ROSS C. RANDALL, M.D., Waterloo
- 3:45. Recent Advances in the Treatment of Nose and
Throat Conditions
College of Medicine, Iowa City
Question Period

Wednesday Afternoon, April 25

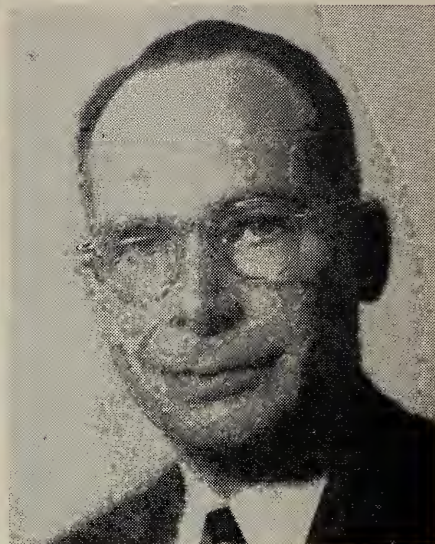
- 1:30. Management of Convergent Strabismus
ALSON E. BRALEY, M.D., Professor of Ophthal-
mology, State University of Iowa College of
Medicine, Iowa City
- 2:00. Orthoptic Training
HAROLD O. GARDNER, M.D., Waterloo
- 2:30. Physiology of the Conjunctival Sac
ABBOTT M. DEAN, M.D., Council Bluffs
- 3:00. Intermission to visit exhibits
- 3:15. Ocular Symptoms in Head Injuries
HENRY H. GURAU, M.D., Des Moines
- 3:45. Recent Advances in Ophthalmic Treatments
ALSON E. BRALEY, M.D., Iowa City



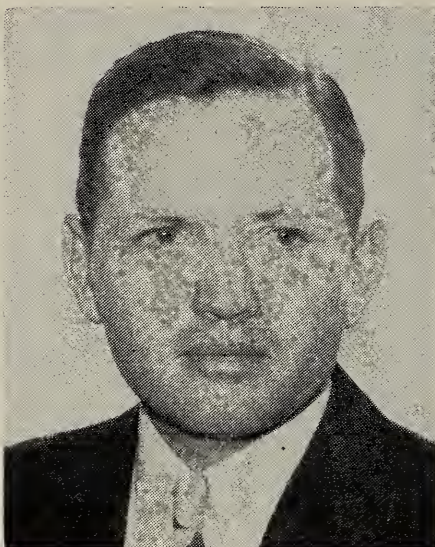
WILBUR R. MILLER, M.D.
Iowa City



JOHN W. CLINE, M.D.
San Francisco



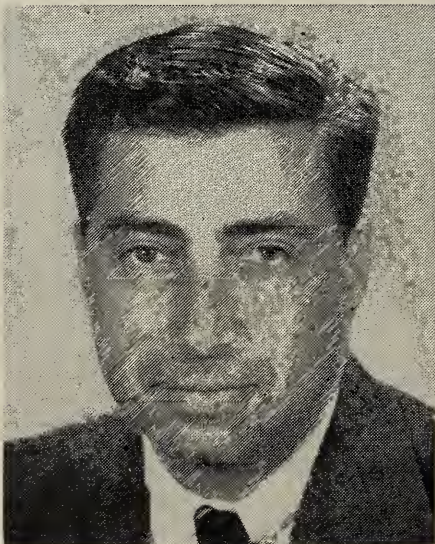
EDWARD G. BILLINGS, M.D.
Denver



WALTER C. GRAHAM, M.D.
Santa Barbara



LOUIS P. RIVER, M.D.
Chicago



JOHN P. SPIEGEL, M.D.
Chicago



EDWARD B. D. NEUHAUSER, M.D.
Boston

Program of Section Meetings

SURGICAL SECTION

EDWARD L. ROHLF, M.D., Waterloo,
Chairman

Tuesday Afternoon, April 24

Stage

- 1:30. Changing Trends in Surgery of the Colon
GEORGE CRILE, JR., M.D., Cleveland
- 2:00. Surgery of the Acute Gallbladder in the Aged
WADE O. PREECE, M.D., Waterloo
Discussers—
JAMES E. WHITMIRE, M.D., Sumner
KENNETH L. JOHNSTON, M.D., Oskaloosa
- 2:30. Diagnosis and Surgery of Posterior Penetrating
Duodenal Ulcer
HOWARD I. DOWN, M.D., Sioux City
Discussers—
WENDELL L. DOWNING, M.D., Le Mars
RALPH A. DORNER, M.D., Des Moines
- 3:00. Intermission to visit exhibits
- 3:15. Recent Trends in the Treatment of Varicose
Veins
G. ERNEST MCFARLAND, JR., M.D., Ames
Discussers—
RUSSELL S. GERARD, M.D., Waterloo
RAY A. FOX, M.D., Charles City
- 3:45. Small Bowel Obstruction with Review of Un-
usual Causes
CARL J. LOHMANN, M.D., Burlington
Discussers—
VERNON BLAHA, M.D., Marshalltown
AMBROSE J. CALLAGHAN, JR., M.D., Sioux City

SURGICAL AND ORTHOPEDIC SECTION

JAMES W. GRAHAM, M.D., Sioux City,
Orthopedic Section Chairman, Presiding

Wednesday Afternoon, April 25

SYMPOSIUM—TRAUMATIC INJURIES

- 2:00. Tendon Substitution to Restore Function in the
Forearm and Hand
WALTER C. GRAHAM, M.D., Santa Barbara
- 2:30. Severe Injuries to the Lower Extremity
ROBERT M. WRAY, M.D., Cedar Rapids
- 2:50. Cornpicker Injuries to the Upper Extremity
CARROLL O. ADAMS, M.D., Mason City
- 3:10. Intermission to visit exhibits
- 3:25. The Traumatic Abdomen
J. PHILIP COGLEY, M.D., Council Bluffs
- 3:45. Chest Injuries
RALPH A. DORNER, M.D., Des Moines
- 4:05. Early Care of Patients with Craniocerebral In-
juries
H. RUSSELL MEYERS, M.D., Iowa City

PEDIATRIC SECTION

HAROLD E. FARNSWORTH, M.D.,
Storm Lake, Chairman

Tuesday Afternoon, April 24

Northeast Room, First Floor, Auditorium

- 1:30. Pancreatic Insufficiency
EDWARD B. D. NEUHAUSER, M.D., Boston
- 2:00. Preventive Pediatrics—Behavior Aspects
LEE FORREST HILL, M.D., Des Moines
Discussers—
HAROLD E. FARNSWORTH, M.D., Storm Lake
JULIAN D. BOYD, M.D., Iowa City
- 2:30. Significant Prenatal Factors Resulting in Ab-
normalities in Infants
RAY R. REMBOLT, M.D., Iowa City
Discussers—
GEORGE J. KLOK, M.D., Council Bluffs
MORGAN J. FOSTER, M.D., Cedar Rapids
- 3:00. Intermission to visit exhibits
- 3:15. Interstitial Myocarditis in Infants
JOHN S. DOWNING, M.D., Cedar Rapids
Discussers—
REGIS E. WELAND, M.D., Cedar Rapids
JACOB N. LANDE, M.D., Sioux City
- 3:45. Some Aspects of Pediatric Surgery
CARL A. JACOBS, M.D., Sioux City
Discussers—
ROBERT H. MCBRIDE, M.D., Sioux City
Peirce D. Knott, M.D., Sioux City

OBSTETRIC SECTION

EMORY E. MAGEE, M.D.,
Waterloo, Chairman

Northeast Room, First Floor, Auditorium

Wednesday Afternoon, April 25

- 2:00. Obstetric Symposium
Moderators—
CECIL W. SEIBERT, M.D., Waterloo
RONALD F. MARTIN, M.D., Sioux City
Discussers—
NORMAN F. MILLER, M.D., Ann Arbor
WILLIAM C. KEETTEL, M.D., Iowa City

IOWA NEUROPSYCHIATRIC SOCIETY

Tuesday Afternoon, April 24

Meeting open to all physicians

Third Floor, Auditorium

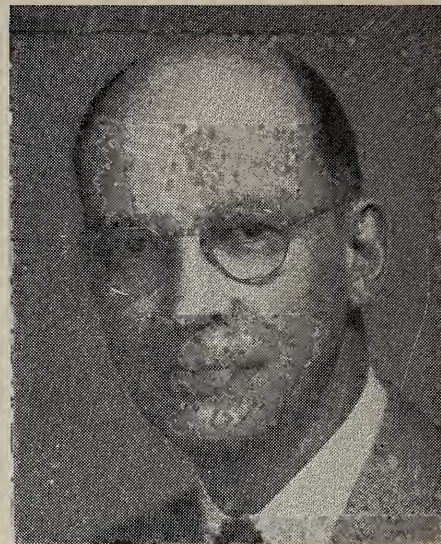
- 1:30. Psychosomatic Aspects of Depression
WILLIAM ROTH, M.D., Professor of Psychiatry,
University of Kansas Medical School, Kansas
City, Kansas
- 2:00. Psychiatric Aspects of Gastro-intestinal Disorders
EDWARD G. BILLINGS, M.D., Denver
- 2:30. Treatment of Psychosomatic Conditions by the
General Practitioner
JOHN SPIEGEL, M.D., Chicago
- 3:00. Intermission to visit exhibits
- 3:15. Round Table—Psychosomatic Conditions
PAUL E. HUSTON, M.D., Iowa City, Chairman
WILLIAM ROTH, M.D.
EDWARD G. BILLINGS, M.D.
JOHN SPIEGEL, M.D.



ALSON E. BRALEY, M.D.
Iowa City



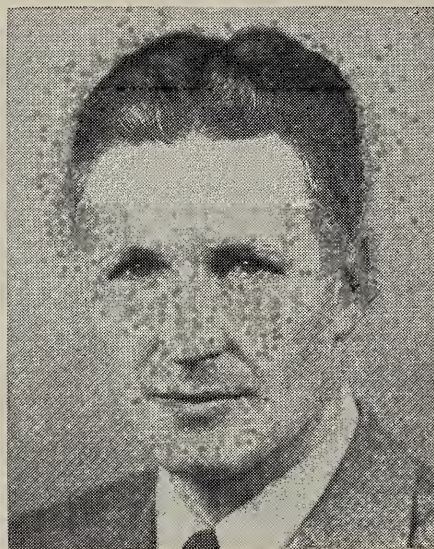
EMMERSON WARD, M.D.
Rochester



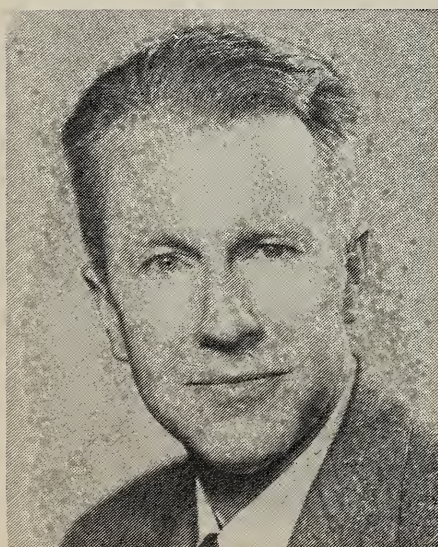
NORMAN F. MILLER, M.D.
Ann Arbor



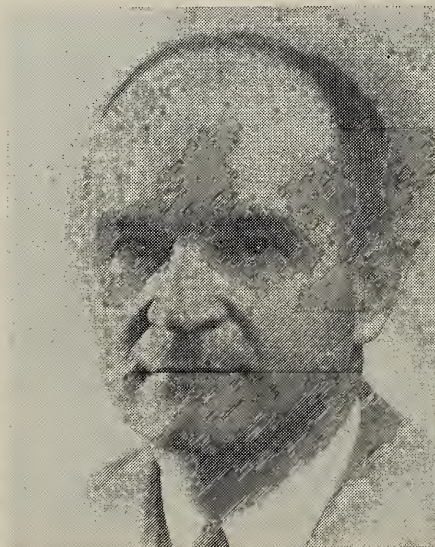
THOMAS C. GALLOWAY, M.D.
Evanston



GEORGE CRILE, JR., M.D.
Cleveland



WILLIAM B. BEAN, M.D.
Iowa City



WALTMAN WALTERS, M.D.
Rochester



WILLIAM ROTH, M.D.
Kansas City

Special Luncheons and Dinners

Monday, April 23

AMERICAN MEDICAL WOMEN'S ASSOCIATION

Parlor A—Hotel Martin

Dinner—6:30 p. m.

Scientific Talk and Business Meeting

IOWA ACADEMY OF GENERAL PRACTICE

Ballroom—Hotel Martin

Dinner—6:30 p. m.

R. C. MUGAN, M.D., Badgerow Bldg.,
Sioux City 9, Local Chairman

IOWA ASSOCIATION OF PATHOLOGISTS

Luncheon—12:15 p. m.

Parlor A—Hotel Martin

Social Hour—5:00 p. m.

Dinner—6:30 p. m.

Corn Room—Hotel Martin

Speakers—A. H. BAGGENSTOSS, M.D., Rochester,
and L. W. LARSON, M.D., Bismarck

IOWA SOCIETY OF ANESTHESIOLOGISTS

Dinner—6:30 p. m.

Rooms I and II—Hotel Martin

IOWA X-RAY CLUB

Social Hour and Dinner 6:00 p. m.

Sioux City Club—Warrior Hotel

Talk—Neurogenic Dysfunction of the Colon and Bladder
EDWARD B. D. NEUHAUSER, M.D., Boston

Tuesday, April 24

IOWA PEDIATRIC SOCIETY

Luncheon—12:15 p. m.

Assembly Room—Hotel Martin

IOWA NEUROPSYCHIATRIC SOCIETY

Luncheon—12:15 p. m.

Rooms I and II, Hotel Martin

ANNUAL BANQUET

Ball Room—Hotel Martin

Social Hour—6:00 p. m.

Dinner—7:00 p. m.

Talk—The Problems Facing Medicine in
the Immediate Future

JOHN W. CLINE, M.D., President-elect, American
Medical Association, San Francisco

Wednesday, April 25

IOWA OBSTETRIC & GYNECOLOGIC SOCIETY

Social Hour and Luncheon—12:15 p. m.

Assembly Room—Hotel Martin

IOWA ORTHOPEDIC SOCIETY

Luncheon—12:00 Noon

Sioux City Club—Hotel Warrior

House of Delegates

Open to all members

First Meeting—Monday Morning, April 23

8:30 a. m.

Main Arena—Municipal Auditorium

Roll Call

Approval of Minutes of Wednesday morning session,
1950

President's Address

President-elect's Address

Reports of Officers

Reports of Committee Chairmen

Memorials and Communications

New Business

Election of Committee on Nominations

**Second Meeting—Wednesday Morning,
April 25**

8:00 a. m.

Main Arena—Municipal Auditorium

Roll Call

Reading of Minutes

Report of Committee on Nominations

Election of Officers

Reports of Committees

Unfinished Business

New Business

Announcement of Committees

Adjournment

Golf Tournament

Sunday, April 22

Sioux City Golf Club

Sioux City

All doctors are invited to participate in the golf tournament which is to be held just preceding the annual meeting.

Open House

The Woodbury County Medical Society will entertain at an open house to be held at the Sioux City Club in the Warrior Hotel Monday evening, April 23. All physicians, wives, exhibitors and guests are invited to attend. There will be refreshments and entertainment for all.

AMERICAN MEDICAL WOMEN'S ASSOCIATION

Branch 19

Dinner Meeting—Monday, April 23, 6:30 p. m.

Parlor A, Hotel Martin

Scientific Talk and Business Meeting

WOMAN'S AUXILIARY

For program of the Woman's Auxiliary meeting, see page 101 of this JOURNAL.

LOCAL COMMITTEES**BANQUET**

R. H. McBride, M.D., Chairman

GOLF TOURNAMENT

W. H. Gibbon, M.D., Chairman

J. E. Dvorak, M.D.

J. S. Deering, M.D., Onawa

HOBBY SHOW

James E. Reeder, Jr., M.D., Chairman

John D. Lutton, M.D.

HOST COMMITTEE

John H. Henkin, M.D., Chairman

OPEN HOUSE COMMITTEE

Joseph M. Krigsten, M.D., Chairman

Charles P. McHugh, M.D.

SCIENTIFIC EXHIBITS COMMITTEE

Emil A. Fullgrabe, M.D., Chairman

John J. Rowe, M.D., Cedar Falls

Rubin H. Flocks, M.D., Iowa City

Scientific Exhibits**Carcinoma of the Gallbladder**

F. C. COLEMAN, M.D., Des Moines and J. R. SCHENKEN, M.D., Omaha

Carcinoma of the Breast

LOUIS P. RIVER, M.D., EUGENE DOLEHIDE, M.D., and JOSEPH SILVERSTEIN, M.D., Chicago

Carcinoma of the Skin

LYNDON M. KING, JR., M.D., and ARNOLD K. MYRABO, M.D., Sioux Falls

Tumors of the Lung

JOHN R. McDONALD, M.D., Rochester

Use of the "Sac" in Herniorrhaphy

F. J. MURRAY, M.D., Omaha

Exhibit

University of South Dakota, Vermillion

Plastic and Reconstructive Surgery

ALBERT S. BLACK, JR., M.D., Omaha

Diagnosis and Management of Chronic Peripheral Arterial Insufficiency

HAROLD N. NEU, M.D., and WILLIAM J. REEDY, M.D., Omaha

Treatment of Fractures of the Long Bones

J. W. MARTIN, M.D., and W. P. JENSEN, M.D., Omaha

Dissecting Aneurysms

B. CARL RUSSUM, M.D., Omaha

Routine Exploration of the Common Duct Following Cholecystectomy for Cholelithiasis

S. J. CARNAZZO, M.D., S. T. MANGIMELLI, M.D., and D. S. ROCCAFORTE, M.D., Omaha

Urologic Pathology

L. E. PIERSON, M.D., and E. M. HONKE, M.D., Sioux City

Prop Spinal Fusion for Disc Syndrome or for Spondylolisthesis**Vein Graft in the Common Duct**

S. J. CARNAZZO, M.D., Omaha

Vaginal Hysterectomy

S. J. CARNAZZO, M.D., and S. T. MANGIMELLI, M.D., Omaha

Free Skin Grafts**A New Method of Preventing the Fatal Embolus (Exhibit and Film)****Surgical Lesions of the Esophagus****Surgical Lesions of the Thorax**

J. W. GATEWOOD, M.D., L. D. MCGUIRE, M.D., A. C. JOHNSON, M.D., and H. H. MCCARTHY, M.D., Omaha

Medical Services for the Crippled Children in the State of Iowa

R. R. REMBOLT, M.D., Mr. W. B. SCHOENBOHM and Mr. DAVID RAY, Hospital School for Handicapped Children and State Services for Crippled Children

Epidemic Ringworm of the Scalp

RUBEN NOMLAND, M.D., R. G. CARNEY, M.D., and I. H. BORTS, M.D., State University of Iowa College of Medicine and RALPH H. HEEREN, M.D., State Department of Health

Squint—Orthoptics

Department of Ophthalmology, State University of Iowa College of Medicine

Carcinoma of the Breast

Department of Surgery, State University of Iowa College of Medicine

Genito-urinary Neoplasms

Department of Urology, State University of Iowa College of Medicine

Spontaneous Subarachnoid Hemorrhage and Intracranial Aneurysms and the Use of Angiography in these Conditions

GEORGE PERRET, M.D., and GORDON SMILEY, M.D., Division of Neuro-Surgery, State University of Iowa College of Medicine

Activities of the College of Medicine

State University of Iowa College of Medicine

Studies in Rheumatoid Arthritis

W. D. PAUL, M.D., and J. I. ROUTH, M.D., State University of Iowa College of Medicine

Rehabilitation in Otolaryngology and Oral Surgery

Division of Otolaryngology, State University of Iowa College of Medicine

Exhibit

D. H. BREIT, M.D., Sioux Falls

Exhibit

Iowa Pharmaceutical Association

Peritoneoscopic Cholangiography

P. G. KEIL, M.D., Veterans Hospital, Des Moines

Exhibit

American Academy of General Practice

METABOLIC AND NUTRITIONAL STUDIES IN THE ADOLESCENT

JOSEPH A. JOHNSTON, M.D.*
DETROIT, MICH.

IN THIS DISCUSSION the term adolescence will be used to embrace a period of accelerated growth followed by one of decelerated growth that precede and follow puberty, that term referring in the girl to the appearance of menses and in the boy spermatozoa.

Growth in man does not follow a straight line, but consists of a series of alternating rapid and slow periods, the curves revealing distinct waves roughly likened to three S-shaped curves, one on another. The third of these is made up of a slight lag about three years before sexual maturity followed by a very sharp acceleration, which terminates in—and is apparently conditioned by—the attainment of sexual maturity. This final spurt is followed by a marked deceleration in the rate of growth.

That growth during adolescence is a function of physiologic rather than of chronologic age was pointed out by Boas¹ and is demonstrated in the charts of Shuttleworth,² which bring out the fact that the growth patterns of girls maturing at ages varying from ten to 17 can be superimposed only if chronologic age is ignored, and the plotting is done in terms of physiologic age, using years preceding and following the menarche. This fact is of far more than academic interest; it is basic to an understanding of many of the normal physiologic variations at this age period which create deep concern in the patient and the parent.

Robertson³ suggested that the transition from one growth curve to another, accompanied as it is by marked changes in metabolism, might be fraught with considerable danger to the growing child. The sharp increase in the reinfection type of tuberculosis during adolescence, the rise occurring first in the girl and later, in the boy suggests strongly that reaction to disease is handicapped by the added demands of growth during this period. It is believed that much of the difficulty can be explained in terms of nutrition and that adequate provision for dietary requirements peculiar to this period may be a major factor in the resistance to disease.

METABOLISM

A prepuberal rise and a postpuberal fall in basal metabolism have been noted by some but not by all investigators in this field. The author's own data show such changes, though it is his impression that in a majority of instances these changes are within physiologic limits. In most of the studies it would seem that the determinations are made at too widely separated intervals to bring out the fluctuant character of the rate of oxidation

during the period of puberty. In the case of D. W., a plotting of the first and last determinations would not reveal a significant deviation, but the charting of all of the measurements at six-day intervals brings out a more or less rhythmic rise and fall culminating in a high point just preceding the menarche and a similar instability, but at lower levels, for some months following it. It is this instability which increases the probability that deviations to pathologic levels either in the direction of hyperthyroidism or hypothyroidism may occur.

CALCIUM AND NITROGEN STORAGE

Studies of the retention of nitrogen and calcium throughout adolescence reflect, as might be expected from the growth patterns, extremely high retentions preceding the onset of menstruation in the girl and frank depressions attending the decelerating phase of growth following it. That this may be the specific effect of the estrogenic hormone in the female is suggested by other data, but in any case the phenomenon exists and is a normal one. In the presence of an adequate intake of protein and calcium and in the absence of disease this depression does not reach the point of actual negative balance, but with an inadequate diet it may readily do so.

DIETARY REQUIREMENTS

What is an adequate dietary intake during this age period? A number of investigators have recorded this requirement in calories, one of the most adequate being a composite by Gillett.⁴ Using satisfaction of appetite and normal growth as criteria, we have found that the caloric requirements of a diabetic child could be determined by multiplying Wetzel's predicted basals by 1.9. While in the case of the diabetic child and the institutionalized patient such estimates serve a useful function, they are not practical for the average child in the home where the total intake is governed by appetite and by economic circumstance. In view of the frequency with which one hears the statement from the overly cautious mother, "of course, I don't allow her to have much meat," it would seem that the provision for protein and calcium requires definite direction. The author has demonstrated that when the diet is adequate in calories as judged by satisfaction of appetite and normal growth, 15 per cent of the total calories should be derived from protein in order to maintain a consistently positive nitrogen balance. The adolescent child requires 90 to 120 grams of protein per day, which can be supplied by one quart of milk, one egg and two slices of bacon, one serving of cheese and a liberal serving of meat at the principal meal. The author has found that the child's appetite for protein is a reliable guide. When an attempt was made to explore the upper limits of nitrogen storage, protein intoxication was frequently encountered if the child's refusal was ignored. The items of food listed will also satisfy the adolescent's requirement for cal-

*Pediatrician-in-Chief, Henry Ford Hospital, Detroit, Mich.
Presented at the Polk County Medical Society Meeting, Des Moines, November 15, 1950.

cium which is approximately 1.4 grams. While a quart of milk is necessary during the period of accelerated growth, it is doubted that this much is required in subsequent years although the balance data of the writer are limited to the three year period following the menarche. In the obese child, receiving a reducing diet, the proportion of calories derived from protein should be increased to 20 per cent, and if the intake of milk is less than a quart a day, the calcium deficit should be supplied by a calcium salt. The usual gram wafers of dicalcium phosphate contain 0.2 gm. of calcium. Vitamin D has been found to be essential for the adequate absorption and retention of calcium during the growth spurt of adolescence. The author has found that increasing retentions follow daily intakes of vitamin D up to 4,000 units. A satisfactory amount during the prepuberal spurt appears to be about 1,000 units per day.

FACTORS AFFECTING STORAGE OF CALCIUM AND NITROGEN

Intake being adequate, a large number of other factors may influence the retention of these two items. The normal fall in basal metabolism which follows puberty tends frequently to be exaggerated to pathological levels and examples are shown of a failure of storage until the hypothyroid state was corrected. The removal of chronically infected tonsils will be shown likewise to excite a similar effect on the retention of these substances. These points are made to stress the fact that nutrition is not simply a question of dietary intake but of a broad consideration of all factors which affect it.⁵

TUBERCULOSIS

The sharp increase in the reinfection form of tuberculosis during adolescence (after the so-called "golden age" when its incidence has been negligible) and the fact that its occurrence in the girl precedes that in the boy by an interval corresponding to their difference in sexual maturation and growth patterns have long suggested that something inherent in the metabolism of this period carries with it an undermining influence on the quiescent primary lesion. Out of 1,000 children with apparently healed primary lesions removed over a period 12 years from homes where there was active tuberculosis to tuberculosis-free rural foster homes, there were about 30 reinfection lesions which appeared after the break in contact. Two-thirds of these were in girls, with the majority of them being between 11 and 17 years of age. The mean menarcheal age was a year earlier than average. Metabolic studies carried out during the course of their tuberculous infections showed a striking correlation between the healing of disease and the retention of nitrogen and calcium. Uninterrupted healing was accompanied by strongly positive balance, whereas spread of the lesion was preceded and always accompanied by negative balances. It is the writer's thought that anything which might be a factor in the production of a

negative balance—inadequate diet, too wide a departure from the metabolism of this normally fluctuant age period involving as it does a number of hormones, the strain of acute or chronic infection and too great an expenditure of energy—may play a role in the flare-up of disease at this time.⁶ The supervision of the child with a primary tuberculous lesion necessitates specific provision throughout this age period for a diet adequate particularly in protein, calcium and vitamin D. A check on thyroid function, as measured by the determination of metabolic rate, pulse pressure or other correlating factors, should also be an integral part of the observation. A record of the time spent in school and extra-curricular activities will often reveal an expenditure of energy at this time incompatible with the demands for normal growth and development and, as a corollary, for the integrity of the healed lesion.

OSSEOUS DISTURBANCES

In a period of growth marked by a pronounced increase in speed and an equally striking phase of deceleration, one should expect an increase in osseous disturbances. Park⁷ and others have recently called attention to definite rachitic changes in this age group, but one of the outstanding clinical entities is the so-called "slipped epiphysis" of the adolescent, or coxa vara. The etiology of the condition is still a matter of conjecture. A number of authors have thought of it as a type of rickets (Fiorani,⁸ Muller,⁹ Bloch¹⁰), but evidence for this is lacking. Key¹¹ reviewed some 300 publications on the subject and critically discussed the theories advanced to explain it. In his 24 cases, there was no exception to the fact that the disorder occurred during the phase of extremely rapid growth. In all series the mean incidence in the girl is at 12 years of age and in the boy at 14 to 15; these ages correspond exactly to the phase of maximum growth. Hoffmeister¹² commented on the fact that characteristically the patient is "overgrown with large bones," although not the typically fat boy. The author has been able to study the calcium balances of three children with this condition. All had negative or abnormally low calcium balances. Improvement in their retentions could be effected by vitamin D. While the etiology of the disturbance remains obscure, any method which would effect a normal retention of calcium would seem to offer a contribution to prevention and therapy. It is suggested that this type of child receive an even larger than average intake of calcium (at least 1.5 grams) and vitamin D (2,000 units) during the pre-adolescent spurt.

THYROID DISTURBANCES

From what has been said about the instability of basal metabolism during this age period, actual pathologic change of the thyroid might be expected.¹³ Of the 157 cases of hyperthyroidism in children reported from the Mayo clinic, nearly 80 per cent were in the age range of ten to 14 years.

Of these 86 per cent required surgical intervention and only 8 per cent were satisfactorily controlled by medical measures. While it must be recognized that there is an element of selection in this series, it does indicate the age of peak incidence. In the author's experience, mild degrees of hyperthyroidism are encountered, which, with high caloric diet, elimination of strenuous school schedules and the administration of iodine have seemed to terminate with the attainment of sexual maturity. The management of the more severe type is at the moment undergoing revision since the introduction of thiouracil and similar substances, but more clinical experience will be necessary before final judgment can be passed on the extent to which these drugs can replace surgery. Astwood's¹⁴ report should be consulted for further data.

In the author's experience, which may be influenced by residence in a goiter belt, hypothyroidism is extremely common in the period just following the onset of sexual maturity. The clinical complaints which have led him to suspect the condition have been chiefly (1) delay in growth and development, (2) mental retardation, (3) fatigue and (4) menstrual disorders. It should be recalled that the effect of thyroid at this period is anabolic and that the administration of thyroid extract to correct an existing deficiency will result in gains in height and weight. It seems obvious that hypothyroidism is rarely a factor in the obesity of the adolescent; the basal calories in the obese adolescent child are definitely elevated and, to the extent that the endocrine glands might exert a causative effect, one would have to assume the existence of an overactivity of the pituitary and the thyroid glands rather than an underactivity. A large number of the patients were referred because their progress in school was unsatisfactory. One of the effects of therapy is the increased span of attention following the elevation to normal of the metabolism. The menstrual disturbances included scanty or profuse flow, and too short or too prolonged intervals between menses. In conformation of the clinical impression of hypothyroidism from such clinical manifestations as slow pulse, low pulse pressure and subnormal temperature, reference to the standards of basal calories proposed by Wetzel¹⁵ provided a correction for those whose body build departed from the average; particularly did this seem true in the overweight child. For the child of average build the basal standards are well summarized by Lewis¹⁶ and others. There is considerable disagreement on the dosage of thyroid extract for the treatment of hypothyroidism. In the author's opinion administration up to "tolerance" is unjustified since with such amounts the initially sought for anabolic effect on nitrogen and calcium is reversed. It is rarely necessary to use more than 1½ grains (90 mg.) of U.S.P. thyroid for even the severe cases of hypothyroidism in adolescent children. When there is an inadequate response to this dosage the intake of protein should

be investigated, or when the low blood pressure is not elevated the normalcy of adrenal function should be determined by means of the salt test.

OBESITY

The author agrees with Bruch's¹⁷ thesis that deficiency of the thyroid is rarely a factor. When the basal metabolic rate was determined by Wetzel's standard in the group studied, the average correction in obese children was 20 per cent. Thus, when a calculation on the conventional surface area method was recorded as -20, the rate by the Wetzel prediction would be normal. Such conditions were in keeping with the clinical picture. The control of weight by a diet high in protein, calcium and vitamin D but low in calories is indicated. In addition, an investigation of the behavior problems so commonly seen in this group is an integral part of the management. A certain number of these children will be shown to have hunger contractions at more frequent intervals than usual, probably as a result of their more rapid utilization of glucose. The high protein low carbohydrate diet, particularly for the morning meal, will be found useful in allaying this symptom.

SEX HORMONES

That puberal development is a slow phenomenon subordinated to skeletal growth for a period of years is evidenced by the fact that, though the androgens or male sex hormones and the estrogens or female sex hormones both show an increase at about seven years of age in both sexes, the marked increase does not occur until the prepuberal period.

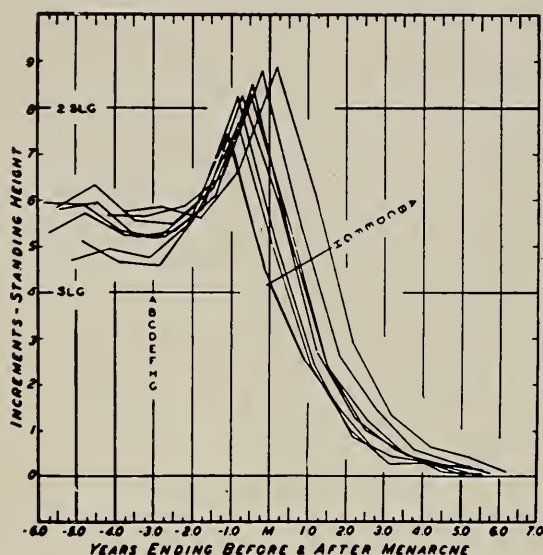
HYPOGENITALISM IN THE MALE

In the recognition and treatment of this condition Hurxthal¹⁸ stresses the following points: (1) though the mean age of beginning pubescence is 11 years, 18 per cent of boys do not manifest it until 14, and the problem is not a real one until that age. (2) Most obese boys, in whom the question of adequacy of genital development is raised by parents, have normal genitals, which are merely obscured by a fat pad. Any testis which has a mass equivalent to a volume of two cc. before pubescence is considered normal. The determination of urinary gonadotropins and ketosteroids is not helpful, since, as shown by McCullagh, normal or increased amounts of gonadotropins are found in boys with apparent hypogenitalism, and low values of ketosteroids are found in delayed puberty and in true eunuchoidism. Testicular biopsy would seem to offer the only exact means for confirmation of the state, but procedure is not justified. Therefore, chorionic gonadotropin, 500 to 1,000 units three times a week, should be given a clinical trial. If this fails, methyl testosterone, 20 to 30 mg. daily, may be tried.

MENSTRUATION

The American girl shows an average age of onset of menstruation of 13 years, the range being between 11 and 15. Only three per cent will begin

earlier and three per cent later. From growth records the onset can be predicted as likely to occur in the year following the one showing the maximum increment of growth in height; except in those who menstruate early, it is likely to occur in the same year. Probably because of the fact that the cycles are anovulatory (Mills¹⁹ and Ogle), irregularity in interval can be expected in the first year. A long interval is particularly common after



the first period. Rarely is such a period as long as that covering 26 cycles, however, before regularity of interval and duration of flow can be predicted. When irregular intervals or a prolonged or scanty flow persists into the second year after menarche, the various factors discussed below should be investigated.

Menstrual Irregularities. Most of the complaints of adolescents and their parents that relate to menstruation can be dismissed as a result of failure to appreciate one or more of the following: (1) the wide range of the age of onset of the menarche; (2) the "normalcy" of irregularity in the first year and (3) the fact that a normal cycle is more closely bound up with the general factors influencing health than with any specific hormone defect.

In a study of 50 girls with menstrual disturbances serious enough not to be dismissed as "physiologic variants" the following factors seemed to play some role in etiology:

1. Nutritional. There were five examples of malnutrition and five of obesity. The correction of either of these states may be all that is necessary to influence favorably the menstrual irregularity, though this may not be simply a matter of diet. One 15 year old girl who had failed to menstruate for six months was found to be profoundly malnourished because of an inadequate caloric intake of only 900 calories. Her basal metabolic rate was minus 25. A study of her scholastic capacity showed that she was attempting work far beyond it, and she had become depressed by her inability to keep up with it. As a result she had anorexia of nervous origin; the depressed metabolism was a function

of her low intake. Only when her school problems were adjusted did she eat normally, and, with an adequate intake, her menses were resumed. In the correction of obesity of adolescence, a low calorie, high protein will effect a loss of weight. It is just as important, however, to inquire into the reasons why a child is overeating, since few children eat excessively except as a solace for social inadequacy. The correction of the underlying emotional difficulty, according to Bruch, constitutes the real solution of the child's problem.

2. Exercise. The teen-age girl seems to go to extremes on activity; there is either too much in the way of athletics, or, in her concern over the curriculum, she gets no exercise at all. Both may be expected to influence the menstrual cycle, presumably through fatigue on the one hand, and through the depression of metabolism that results from inactivity on the other. An excellent demonstration of the latter effect occurred in an industrial plant employing a large number of teen-age girls as office clerks. Because of the number of days of absenteeism resulting from dysmenorrhea, a study was made. One group of girls with this complaint were placed at complete bed rest during the period, whereas another group participated in active sport (basketball) followed by hot and cold showers. There was a significant shortening of the duration of the complaint in the latter group. Ewing²⁰ eliminated the complaint in 50 per cent of 500 girls and observed improvement in a majority of these with a regimen of posture correction and exercises. The Mosher exercise, consisting of contraction and relaxation of the lower abdominal muscles independent of breathing was used. Ewing also stressed the need for the correction of constipation.

3. Psychogenic factors. Such disturbances seem to play a causative role in 12 per cent of our series. The girl who is "straining her I.Q.," in a discouraging attempt to do schoolwork beyond her capacity and the girl whose overambitious parents permit a full school schedule to be supplemented with hours of music practice and social engagements may show evidence of the strain in a disorder of the menstrual cycle. An experienced physician at a woman's college reports that during the first semester of the freshman year she expects a majority of the class to show an interruption of the menstrual cycle; this is attributed to two main concerns: whether they will make passing grades and whether they will be accepted in a sorority.

4. Thyroid disturbance. The fact that there is a normal tendency for the basal metabolic rate to be elevated before and depressed after the menarche results in an increase in the number of instances in which this physiologic change reaches abnormal levels. Within the limits of physiologic variation, the changes can be ignored, but, when they extend beyond these limits, the disturbed state will be reflected in an abnormal menstrual cycle. We have observed mild degrees of hyper-

thyroidism, as evidenced by nervousness, sweating, elevations in pulse rate and pulse pressure and increased metabolic rate, which responded to treatment with rest and iodine which, in turn, was followed promptly by the appearance of the first menstrual period. In the group of 50 menstrual disturbances referred to, the metabolic rate was determined in 34 of the girls. It was elevated in ten and depressed in 18 of them. Of the latter, 16 were benefited by therapy with thyroid extract. It should be remembered that a low metabolic rate is not equivalent to the diagnosis of hypothyroidism, and that, in particular, a depressed rate may be observed with an inadequate intake of food.

5. Organic lesions. In the study there were five girls who had organic lesions: two with cystic endometritis, two with ovarian cysts, and one with an adenomyoma. Though it is true that the majority of menstrual disturbances in the first few years following menarche reflect more general disturbances capable of being evaluated and treated by the pediatrician, no case should be followed up long without resort to gynecologic consultation. To resort to it routinely may result in psychic trauma and may defeat attempts at management of a situation requiring only a common sense direction of activities. A doctor's daughter so bitterly resented her first experience with a gynecologist that she refused all medical help for a time, and finally agreed to talk with her pediatrician only because she had known him many years.

Annual increments in standing height of eight groups of girls who attained menarche at different

of basal calories being 200. There is a tendency to high rates just preceding and to lower rates following the menarche. With intake constant, retentions of both calcium and nitrogen were high preceding and depressed following the menarche. This is in keeping with what might be expected from the

STANDING HEIGHTS AND MENARCHEAL AGES OF EACH GROUP

Groups	Averages of Standing Height in Cms.	Averages of Midpoints of Menarcheal Ages
A	144.52	11.00
B	151.60	11.75
C	153.25	12.25
D	152.33	12.75
E	155.16	13.25
F	154.92	13.75
G	153.20	14.25
H	154.87	15.00

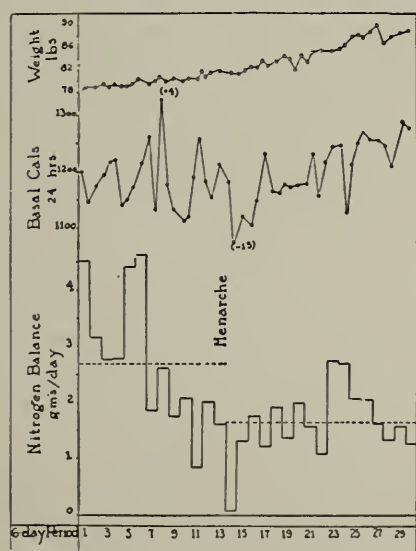
(From Shuttleworth, Monographs of the Society for Research in Child Development)

rates of growth at this time. (Rates calculated on Boothby standards.)

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ages. The curves are arranged so that the points corresponding to the menarcheal age are on the same vertical line. The three horizontal grid lines indicate, respectively, zero growth per year, one-ninth of the average growth from age eight to 17 (SLG), and two-ninths of the average growth from age eight to 17 (2SLG).

Metabolism at puberty. The basal metabolic rate is fluctuant in this well trained subject, the range

FOLIC ACID ANTAGONISTS IN THE TREATMENT OF LEUKEMIA*

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WITHIN THE PAST few years many new chemotherapeutic agents have been tried in the management of malignant neoplasms of the hemopoietic system. Among these are the folic acid antagonists. Farber¹ found an "acceleration phenomenon" of the leukemic process when folic acid conjugates were given to patients with leukemia and because of this reaction folic acid antagonists were tried in the therapy of acute leukemia. In 1948, he reported on the results obtained by the use of aminopterin in the treatment of 16 children with this disease. Ten of these showed clinical and hematological evidence of improvement for a period of at least three months. In addition to its effect on the bone marrow, evidences of a beneficial effect on the leukemic deposits in the spleen and lymph nodes were found. Somewhat later Farber² reported that over 50 per cent of 60 cases showed significant beneficial effects directly attributable to the drug. Jacobson³ treated four patients with aminopterin and six patients with methopterin. Beneficial clinical and hematological effects were obtained in one patient with each of the drugs but toxic reactions were encountered in all patients receiving aminopterin. He felt that methopterin was less toxic than aminopterin. Pierce and Alt⁴ treated 11 patients, obtaining complete remissions in five. Two of the remissions lasted six weeks and three lasted less than one month. The remissions were characterized by severe marrow aplasia followed by rapid regeneration. None of the remissions were sustained. In 1949, Dameshek⁵ reported on the results of treatment of acute and subacute leukemia, 31 of his 35 patients being adults. His corrected statistics revealed nine remissions in 26 cases treated. Meyer et al⁶ treated 43 patients and found distinct improvement in four, extreme toxic manifestations in 15 and 24 unaffected by aminopterin. Sacks⁷ and his group have recently published complete reports on 14 patients with acute leukemia treated with folic acid antagonists. Two cases had complete temporary remissions for 81 and 30 days. Three patients had partial temporary remissions and therapy did not influence the course of the disease in nine patients. Their criteria for complete remission consisted of normal peripheral and bone marrow patterns, decrease in size of the spleen and lymph nodes, normal temperature and improved sense of well being.

This report deals with the clinical trial of two of these folic acid antagonists, aminopterin and

A-methopterin, in ten cases of acute leukemias seen at the University Hospital.

Case 1. Diagnosis: Acute lymphatic leukemia.

R. J. F., white male, four years of age with a history of glandular enlargement, weakness, dyspnea and apathy of four weeks duration. Examination revealed generalized glandular enlargement, hepatomegaly and splenomegaly. The leukocyte count was 79,000 with 92 per cent lymphocytes. The patient was first treated with combined x-ray therapy and aminopterin. The leukocytes dropped to 8,800 and 51 per cent neutrophils were found in the peripheral blood. He returned to the hospital at monthly intervals for the next six months at which times he received aminopterin alone. The average leukocyte count on these admissions was 150,000 with 90 to 96 per cent lymphocytes. On each occasion after one mgm. of aminopterin daily for four to six doses the leukocytes fell precipitously and in the next three to four days, without further therapy, the count dropped to normal. Bone marrow aspiration done after treatment on three occasions showed only a slight elevation in the number of lymphocytes. The boy eventually died at home.

Results: Good temporary remissions with repeated courses of aminopterin.

Case 2. Diagnosis: Acute lymphatic leukemia.

D. B., white girl, age three, a cerebral spastic, with a history of enlarged glands, weakness and bleeding from the mouth of six weeks duration. Examination revealed ecchymoses, bleeding in the pharynx, generalized glandular enlargement and slight hepatomegaly.

The leukocyte count was 36,000 with five per cent lymphoblasts and 65 per cent prolymphocytes.

One mgm. of aminopterin caused a drop in the leukocyte count from 19,900 to 4,900. Supportive transfusions were given, she improved clinically and was discharged from the hospital. She returned one month later with a leukocyte count of 38,900 and 40 per cent lymphoblasts. Aminopterin, one-half mgm. daily for four days and one mgm. daily for four days, a total of six mgm., dropped the leukocyte count to 5,600. She was markedly improved from a clinical and hematologic standpoint and returned home.

Results: Good temporary clinical and hematologic remission.

Case 3. Diagnosis: Myelogenous leukemia, aleukemic.

E. D., 70 year old white male with weakness, dyspnea, pallor and gingival bleeding for one month. Examination revealed a few nodes in the left axilla and the liver extended two finger breadths below the costal border.

The leukocyte count was 1,200 with 82 per cent lymphocytes. The bone marrow revealed a high percentage of myeloblasts and myelocytes and was characteristic of myelogenous leukemia. Aminopterin two mgm. daily was given for two days and then one mgm. daily for seven days. He had a complete clinical and hematologic remission of three months duration followed by a relapse with bleeding and leukemia cutis. Treatment on the second admission consisted of nitrogen mustard.

Results: Fair.

Case 4. Diagnosis: Acute lymphocytic leukemia.

M. McG., 19 year old white woman with anemia which began one month following birth of a child. Examination revealed anemia and splenomegaly but no lymphadenopathy.

The leukocyte count was 12,800 with 76 per cent

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lymphocytes and four lymphoblasts. The bone marrow was typical of acute lymphatic leukemia.

She was given aminopterin, two mgm. daily for six doses and then one mgm. every third day. A remission occurred which lasted for one month. A relapse followed which was treated with transfusions and a second relapse was treated with aminopterin, one mgm. daily for seven doses which dropped the leukocytes from 81,500 to 41,000. The drug was stopped due to stomatitis, petechiae, ecchymoses and epistaxis. She died one month later at home.

Results: Fair with only a short remission induced by aminopterin.

Case 5. Diagnosis: Monocyte leukemia.

A. S., 59 year old woman with ecchymoses, skin nodules and hemorrhage following a tooth extraction. Examination revealed infiltrated nodules and petechiae in the skin.

There was a leukocytosis of 75,400 and the bone marrow was characteristic of monocytic leukemia.

This was a fulminating case and she died eight days after admission, having received three mgm. of aminopterin.

Results: None.

Case 6. Diagnosis: Acute myelogenous leukemia, subleukemic.

H. N., 52 year old white male with weakness, anemia and fever. The physical examination revealed nothing of consequence except for the pallor.

The leukocyte count was 3,800 with 44 per cent immature cells.

A-methopterin, five mgm. daily for six days, was given. The drug was discontinued because of bleeding from the bowel and thrombocytopenia. There was some subjective improvement.

Results: Fair.

Case 7. Diagnosis: Acute myelogenous leukemia.

N. K., white male age 30 with generalized pain, skin rash and weakness. Examination revealed purpura, splenomegaly, and hepatomegaly.

The leukocyte count was 36,000 and the marrow was characteristic of acute myelogenous leukemia.

A-methopterin five mgm. daily was given for 11 days and then discontinued because of nausea, stomatitis and severe hemorrhagic tendencies. The leukocyte count before treatment was 12,000 and after treatment was 26,400. This was a fulminating case and the patient died in spite of treatment.

Results: None.

Case 8. Diagnosis: Acute lymphocytic leukemia.

D. R., 25 year old white pregnant woman with weakness and fatigue. Examination revealed a marked enlargement of liver, spleen and six to seven month pregnancy.

The leukocyte count was 110,000 with lymphoblasts predominating. Treatment consisted of A-methopterin, five mgm. every other day for eight days. The leukocyte count dropped from 110,000 to 61,000. She died two days after delivering a premature dead fetus.

Results: Poor.

Case 9. Diagnosis: Acute lymphocytic leukemia.

L. G., five year old white boy with glandular enlargement, pallor and weakness for three weeks. Examination revealed lymphadenopathy, splenomegaly and hepatomegaly. X-rays of the chest showed leukemic infiltration of the lungs and a pleural effusion in the right chest.

The leukocyte count was 84,000 with 60 per cent lymphocytes and 18 per cent lymphoblasts. The mar-

row was compatible with acute lymphocytic leukemia.

Aminopterin, one mgm. every other day for four doses, caused the leukocyte count to drop to 33,000 but the patient did not appear to improve. The aminopterin was discontinued and x-ray therapy was then given over the thorax. Aminopterin was started again, one mgm. daily, with only slight clinical improvement although the leukocyte count dropped from 22,600 to 7,000. He was released as slightly improved, but was readmitted two weeks later with a leukocytosis of 40,000.

Results: Poor.

Case 10. Diagnosis: Acute lymphocytic leukemia, subleukemic.

M. J. W., five year old white girl with abdominal distention, anorexia and fatigue following a fall two months before admission. Examination revealed petechiae, ecchymoses, hepatomegaly and splenomegaly.

The leukocyte count was 2,600 with 81 per cent lymphocytes.

The bone marrow was characteristic of acute lymphocytic leukemia.

Treatment consisted of aminopterin 0.5 mgm. daily with no hematological response. On her second admission she was given x-ray therapy plus aminopterin and there was some improvement. Aminopterin, nine mgm. caused the leukocyte count to drop to 1,200. The patient remained fairly well for three months then returned with a crusting lesion in the nose. The leukocyte count was 3,800, erythrocytes 3.11 million and hemoglobin 7.5 gm.

Results: Good remission for three months.

DISCUSSION

Folic acid is apparently a necessary vitamin for blood cell metabolism. Farber¹ found that folic acid conjugates, such as diapterin and triopterin, caused an "acceleration phenomenon" of the leukemic process, whereas folic acid antagonists such as aminopterin, methopterin. A-methopterin and amino-an-fol, produced a toxic compound that led to folic acid deficiency and resultant changes in the hematologic picture. The response to this drug varies from a "complete temporary remission" with shrinkage in the size of the lymph nodes and spleen to those in whom there is no response at all.

The best results in the treatment of acute leukemias has been in the lymphocytic type. Folic acid antagonists appear to be relatively ineffective in the treatment of myelogenous and monocytic leukemia. Likewise the drug appears to have little effect on the acute fulminating cases, and as Dameshek pointed out, the best results are obtained with the subacute cases. In his experience favorable results might be expected in about one third of the acute cases.^{2,5}

In cases of subleukemic leukemia and aleukemic leukemia, these drugs have a tendency to cause the peripheral leukocyte count to rise to normal while in the leukemic phase the leukocyte count dropped to near normal values. Similar variations in the bone marrow were noted.

Folic acid antagonists, by their toxicity, lead to hypoplasia of the bone marrow, and hence have no

direct favorable influence on the hemoglobin, red blood cell count or platelet count, and supportive transfusions during therapy may be desirable.⁶ Folic acid was first used in conjunction with a folic acid antagonist as one means of combating the anemia but this was given up when it was found that it caused an acceleration of the leukemic process.¹ Dameshek⁵ and others have recommended continuation of the drug with a reduced dosage after a remission has been affected. He warns, however, that after a period of time, in spite of treatment, the body will become refractory to folic acid antagonists, and the leukemic process will eventually take over.

Folic acid antagonists are toxic to the patient and daily leukocyte counts, platelet counts and frequent checks of the bleeding and clotting time are desirable. Evidences of toxicity necessitate discontinuing the drug for four to seven days before re-instituting therapy. Manifestations of toxicity are stomatitis, leukopenia, aplasia of the bone marrow, thrombocytopenia, bleeding, cutaneous eruptions and occasionally alopecia.⁸

Folic acid antagonists will produce a temporary remission in only about 30 per cent of the cases of acute leukemias. Farber,^{2,5} as well as all others, have emphasized that these drugs will not effect a cure but will, in many instances, prolong life for a variable length of time.

SUMMARY

Three patients treated with folic acid antagonists obtained good although temporary results, three obtained fair results and in four results were poor. These figures are comparable to the results of other investigators.

The drug appears to be most effective in subacute lymphocytic leukemia and ineffective in the acute fulminating type.

The drug will produce only temporary remissions and does not cure the disease.

The aminopterin and A-methopterin used in these studies was supplied by the Lederle Laboratories Division of the American Cyanamid Co.

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THE MANAGEMENT OF LACRIMAL DUCT OBSTRUCTION

CARL A. NOE, M.D.

CEDAR RAPIDS

LACRIMAL DUCT obstruction in infancy and early childhood differs from that which occurs in later life. Because of this we will consider the two types of obstruction separately.

INFANCY AND EARLY CHILDHOOD

Tears begin to flow when a baby is about three weeks old. It has been estimated that in 35 per cent of babies the nasolacrimal duct is not completely open at birth. In one and one-half to five per cent of babies, the ducts have not completely opened when they are needed to carry away the tears. Some ducts will open spontaneously after this age, and if this does not occur, medical aid is usually sought when the child is about three months old. The child is brought to the office because of tearing, usually in one eye, often a purulent discharge, and the examiner can usually express mucopus out of the tear sac. Sometimes the child has been treated unsuccessfully for a chronic conjunctivitis for some time.

Treatment: Conservative treatment such as irrigation of the tear sac once or twice a week or daily finger expression of the sac by the mother may be tried for a few weeks. If this does not succeed, or if it is impractical, it has been our custom, for the past ten years, to gently dilate either the lower or the upper punctum and canaliculus and gently irrigate it with normal saline; if an obstruction is found to carefully pass a No. 1 Bowman lacrimal probe through the canaliculus, sac and nasolacrimal canal into the nose. Gentle but firm pressure is made when the probe is felt to be in the nose and the lower end of the probe can be felt to strike the bone in the floor of the nose. Then irrigation is tried again. If the solution goes through into the nose, the obstruction is usually permanently cured. If the passage is not open the probing may be repeated and a metal probe may be inserted under the inferior turbinate in such a manner that the two probes meet. If a false passage is created, another probing should be deferred for about two weeks. Then it may be repeated and usually will be successful. The parents are given a mild antiseptic solution such as Zephiran 1:5000 to use three or four times a day and are asked to return with the child if all symptoms have not completely subsided in two weeks. Rarely is a second probing needed, and if needed, it is usually successful.

This treatment can easily be continued to age of 12 months by using two drops of one-half per cent Pontocaine before irrigation and no anesthesia. A stout parent and a good office nurse can furnish the necessary immobilization. In older children a general anesthetic may be needed. Recently Cas-

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sady¹ has recommended essentially the same procedure which I have outlined above. As he shows in his article, the success of this procedure depends on the breaking of the membranous closure of the lower end of the nasolacrimal duct. In early childhood this is nearly always the site of the obstruction.

IN THE ADULT

Here the problem is not as simple. In most cases of chronic lacrimal obstruction no definite cause can be demonstrated. Trauma and infection play a part. X-ray therapy for epithelioma near the tear passages almost invariably closes them. The site of obstruction varies. If the canaliculi are obstructed there is tearing but not much pus. If the sac is shrunken or obliterated there is again not much pus. If the obstruction is in the lower end of the sac, the sac is usually dilated and full of mucopus which usually can be expressed. Often recurrent acute infections occur.

It is usually not possible to relieve chronic lacrimal duct obstruction in the adult by simple probing. However, it should probably be tried in each case. Hallum² cautions against using probes larger than No 3 Bowman because of permanent damage to the canaliculi. We rarely use probes larger than No. 4. If probing two times a week for three weeks does not relieve the obstruction it is usually useless to continue.

In our experience many patients will not want anything else done. They would rather have the tearing than an operation. If, however, they want relief from tearing, steps must be taken to create a new passage for the tears into the nose. If they simply want relief from the danger of infection of the globe or from repeated acute tear sac infections, a dacryocystectomy will give them this. Removal of the palpebral part of the tear gland gives variable results in the relief of epiphora. All this should be discussed with the patient.

How best to accomplish a successful dacryocystorhinostomy has been a subject of discussion for many years. Operations which have gained favor have been the Polyak-West procedure in which the approach is entirely from the nasal side, the Mosher-Toti operation in which both intranasal and extranasal approaches are utilized and the Dupuy-Dutemps operation in which the approach is entirely from the outside. The latter operation, strongly advocated by Hallum² and Welt³, seems to be the most logical and the most highly successful one. However, in attempting it many difficulties are encountered. It consists of freeing the sac on the medial side and lifting it out of its bed, making a new opening in the bone, half in front of and half behind the anterior lacrimal crest, and incising the nasal mucous membrane in such a way that a similar incision in the medial wall of the sac may be sutured to it, posterior to posterior lip and anterior to anterior lip. Often it is difficult to preserve the mucous membranes of both sac and nose so that this apposition can be well accomplished.

In 1939 Stokes⁴ reported a method of anastomosing the lacrimal sac with the nasal mucous membrane without the need for careful appositional suturing. We have used this with slight modifications. The sac is freed as in the Dupuy-Dutemps operation, but is cut off as far down in the bony naso-lacrimal canal as possible. The bony opening is made as described above. We prefer mallet and gauge and Kerrison biting forceps to a motor driven trephine, which may slip and which generates considerable heat. The bony opening should be about 12 mm. in diameter and should have smooth edges. A T incision is made in the nasal mucous membrane if it can be preserved intact. Two heavy silk sutures are now passed through the lower end of the sac so that one side of the loop lies within the lumen of the sac and the other lies on the outside. These are not tied. A small curved hemostat is brought up through the nose, the free end of the heavy silk sutures is grasped and brought into the nose through the bony opening, out the anterior nares and fastened with slight tension on the outer surface of the nose with adhesive. This brings the lower free end of the sac to lie in the nose beyond the cut nasal mucous membrane, usually just in front of the anterior end of the middle turbinate. The anterior flap of the nasal mucous membrane can be brought forward and stitched to the anterior wall of the sac if possible. The skin is closed with silk. The long sutures in the nose are left in place for seven to ten days. They may pull out sooner. Usually irrigation is not attempted until the third or fourth postoperative day. If the passage is well open then it usually stays open. If not, the new canal may still open a few days later when the edema subsides. Local or general anesthesia may be used. Local anesthesia is preferred because of greater hemostasis. We have had one failure in 15 cases so operated. This occurred in one side of a bilateral case operated at the same time. This patient pulled his nasal sutures out on the first postoperative day.

This operation is recommended to those who have difficulty in suturing the mucous membranes in the Dupuy-Dutemps operation.

SUMMARY

1. Occlusion of the tear duct in infancy and early childhood usually is due to an unruptured lower end and is nearly always cured by a single careful probing.
2. Such probing can well be done as an office procedure without anesthesia at ages three to 12 months.
3. Probing is rarely effective in relieving tear duct obstruction in the adult.
4. Anastomosis operations are frequently successful in the adult.
5. A technic for such an operation has been described.

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DISCUSSION

VERNE R. HEIMANN, M.D., *Sioux City*: Dr. Noe is to be commended for his concise and revealing paper on the Management of Lacrimal Duct Obstruction.

Ophthalmologists disagree with the treatment which many pediatricians and general practitioners use in prescribing for lacrimal duct obstruction in babies. Often parents are told that time and drops or ointment will relieve the trouble but we know this is wrong as the obstruction will not be corrected in any of these ways. Early treatment is necessary as Dr. Noe has outlined, if the epiphora is to be corrected and if permanent changes in the naso-lacrimal sac and duct are to be prevented.

Our office varies in a few ways with the stated procedure, in that a light general (ether) anesthesia is given in all cases in infants. We dilate the lower punctum, and then pass a number one Bowman probe into the naso-lacrimal duct to inspect and feel in the nose to be sure that the probe has passed through the obstruction. We then irrigate with a mercurochrome solution and check the pharynx with a tongue blade to be sure the solution comes through into the nose. One probing usually takes care of the obstruction in the naso-lacrimal duct and two at the most. We send the patient home on a zinc-adrenalin eye drop mixture to be used two to three times a day with a follow up visit in two weeks.

In adults our procedure is much the same and I am sure we all have our own little modifications in the operative anastomosis procedures. We find too, that most of the older patients would just as soon continue with their eye drops, especially in the ones with mild or moderate complaints. The more severe cases will often consent to an operative procedure as the Mosher-Toti or Dupuy-Dutemps. Occasionally in older adults, I find that if the naso-lacrimal passages are open but lacrimation continues, two or three Zeigler cautery punctures on the conjunctival surface about one to two mm. below the lower punctum will often help.

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STENOSIS OF THE PULMONARY CONUS WITHOUT ASSOCIATED DEFECTS: A CASE REPORT

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STENOSIS of the pulmonary conus or infundibulum at the lower bulbar orifice is a rare malformation of the heart, especially when it is uncomplicated by other defects. Keith¹ was the first to classify the types of congenital pulmonary stenosis. He included four groups as follows: (a) separation of the right ventricle proper from the infundibulum by a fibromuscular septum, (b) cases of arrested developmental expansion of the infundibulum, usually resulting in a fusiform infundibular cavity, (c) almost complete arrest in developmental expansion of the infundibulum and (d) stenosis and fusion of the pulmonary valve cusps.

The case to be reported here belongs to Keith's first group. A review of the available literature^{2, 3, 4, 5, 6, 7, 8, 9} indicates that this type, as a single lesion, is excessively rare. The deformity occurred 19 times in Keith's series, but it was complicated in nine instances by an interventricular septal defect, in three cases by patent ductus arteriosus, in two cases by a patent foramen ovale and in four cases by stenosis of the pulmonary valve. Presumably only five cases in this series were unassociated with other defects. Dryerre¹⁰ reported a case in which infundibulum stenosis was associated with a small slit in the ventricular septum that was guarded by a fold of endocardium so that it probably did not permit the passage of blood. Abbott¹¹ has published the illustrations of two cases.

Greene and associates¹² and Dow and associates¹³ have recently reviewed the subject of pure congenital pulmonary stenosis and suggest that it is not as rare as was formerly thought. Therefore it is useful to report the details of additional cases. With the growing confidence of cardiac surgery it is imperative that modern diagnostic methods be applied to all types of congenital defects of the heart and even the unusual lesion to be described might be recognized intra vitam by angiocardio-graphic and catheter studies.

CASE REPORT

Clinical Observations: A 48 year old man, a musician, entered the University Hospitals on December 23, 1948 complaining of weakness, fatigue, gradually increasing shortness of breath and a chronic non-productive cough, all of five months duration. Because of a red blood cell count of 1,800,000 per cu. mm. he was transfused at another hospital one month prior to admission. There was no history of bleeding or fever. He had

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known since the age of 12 years that a heart murmur existed, but there were no symptoms of cardiac disease prior to the onset of the present illness. There was no past history suggestive of rheumatic fever.

The physical examination revealed a malnourished and chronically ill man with pale skin and mucous membranes. Examination of the head, neck and lungs was negative. The right ventricle was moderately overaccessible to palpation and the left

segmented forms. The blood platelet count was 70,000 per cu. mm. Urinalysis revealed moderate albuminuria and microscopic hematuria. The erythrocyte sedimentation rate was 41 mm. in 60 minutes (Westergren method). The first three blood cultures were positive for a pleomorphic non-hemolytic streptococcus, and the same organism was cultured from the infected pilonidal sinus tract. A roentgenogram of the chest revealed generalized cardiac enlargement with straightening of



FIGURE 1. The right ventricle and right auricle have been opened. The interventricular septum is on the left. A portion of the medial cusp of the tricuspid valve has been cut away. The hypertrophy of the right ventricular wall and of the columnae carneae is well demonstrated. The probe passes through the rigid foramen in the anomalous fibromuscular septum into the dilated pulmonary conus beyond.

border of cardiac dullness was 11.0 cm. beyond the midsternal line. There was a loud, harsh systolic murmur heard best at the fourth intercostal space at the left sternal border and transmitted over the entire precordium. An early, high pitched, short diastolic murmur also was heard in this same area. These murmurs were not continuous. The pulmonary second sound was not accentuated, and the aortic second sound was heard only faintly. The cardiac rate was 84 beats per minute with a regular rhythm. The blood pressure was 102/60 mm. Hg. The spleen was just palpable. There was an infected pilonidal sinus tract. Moderate pitting pretibial edema was present.

The hemoglobin was 9 gm. per 100 ml.; the red blood cell count 3,180,000 per cu. mm. and the leukocyte count 15,000 per cu. mm. with 84 per cent

the middle third of the left border of the heart, and the left ventricle was thought to be especially prominent. Cardiac fluoroscopy suggested slight right and advanced left ventricular enlargement. The electrocardiogram, however, was diagnostic of right ventricular hypertrophy but was not otherwise abnormal.

One day after admission the rectal temperature rose to 101.6° F. Three days later there were showers of petechiae in the skin, and the urine became grossly bloody. A diagnosis of subacute bacterial endocarditis was made, and massive doses of penicillin were given at the rate of twelve million units per day for 23 days. Blood cultures were consistently negative after the second day of penicillin therapy. The patient became afebrile and appeared to be improving. It was presumed that the

endocarditis involved the aortic valve and that aortic stenosis was the predominant valve lesion.

Twenty-eight days after admission the patient suddenly became dyspneic, cyanotic and comatose. The veins in the neck were observed to be markedly dilated and to pulsate. The cardiac rhythm was grossly irregular at a rate of 60 beats per minute, and the blood pressure was unobtainable. An electrocardiogram revealed an incomplete auriculoventricular block which varied between 2:1

smaller than the left. The right ventricular wall was 1.5 cm. in thickness, while the left was only 1.0 cm. On the right side the columnae carnae were hypertrophied and the chorda tendineae thickened. The tricuspid valve measured 12 cm. in circumference and had thickened cusps. On the surface of the valve were found numerous verrucous growths measuring from 1.0 to 5.0 mm. in diameter. There was an anomalous fibromuscular septum in the right ventricle at the level of the

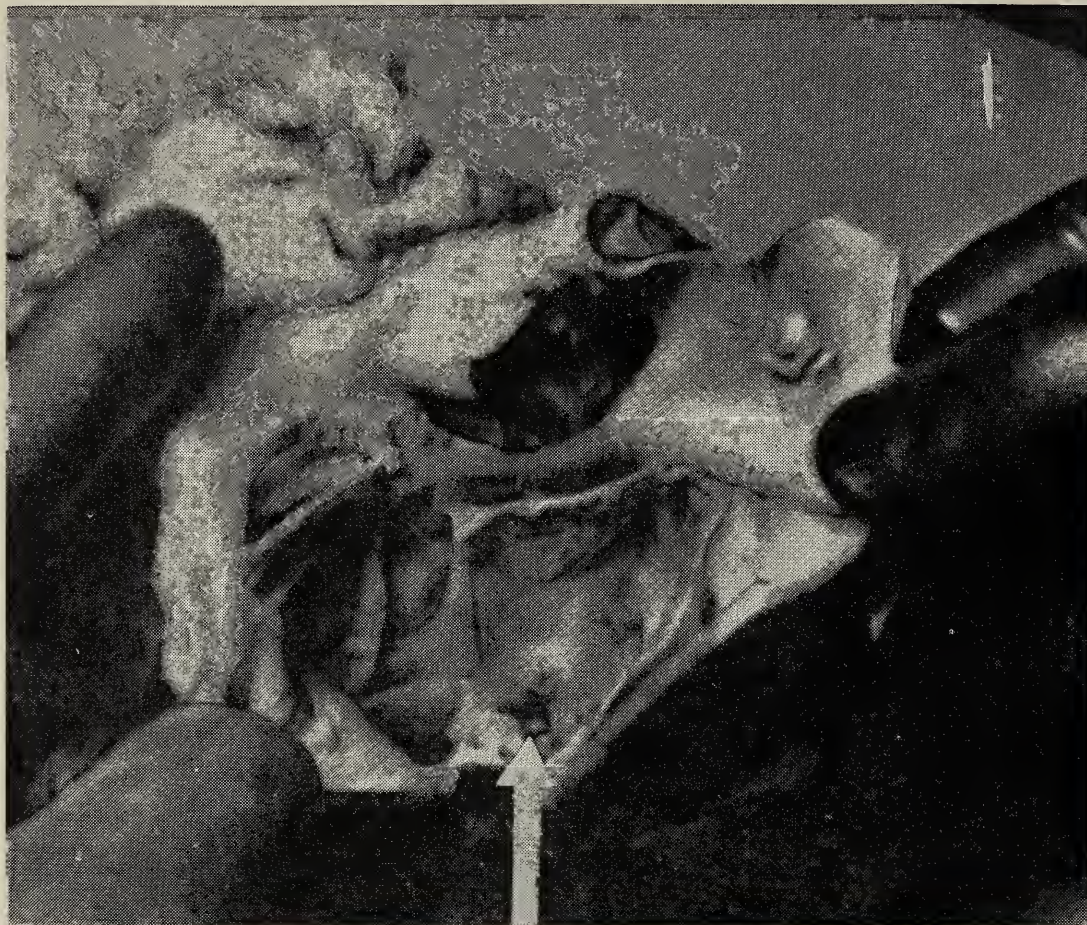


FIGURE 2. The dilated pulmonary conus chamber as viewed from above. The cusps of the pulmonary valve are seen and are normal except for a few verrucae. The irregular margin of the stenotic orifice in the anomalous fibromuscular septum can be seen beneath the pulmonary valve at the point of the arrow. The thrombus, which has been removed, was attached to the dilated pulmonary conus wall on the right, just below the pulmonary valve cusps.

response and the Wenckebach phenomenon. Death occurred within 30 minutes from the onset of the episode.

Postmortem Observations: At autopsy the heart weighed 600 gms. No fluid was present in the pericardial sac, but the pericardial space was obliterated by fine adhesions which were easily separated. Before section of the heart, enlargement of the pulmonary conus area was noted. When the heart was opened, the auricular septum was found to be intact. Within the right auricular appendage there was an antemortem thrombus which was firmly attached to the walls. The apex of the appendage was necrotic. Microscopically there was only a mild inflammatory reaction around the infarcted area.

The right ventricular cavity was somewhat

crista supraventricularis, arising near the attached margin of the anterior cusp of the tricuspid valve, extending across to the free wall of the ventricle and effectively separating the pulmonary conus from the right ventricle proper (Figure 1). In this septum there was a rigid orifice measuring 2.5 cm. in circumference affording the only communication between the right ventricle and the pulmonary conus. Small verrucae were present on the edges of this opening (Figure 2).

The pulmonary conus was dilated and thin walled. Within its cavity an antemortem thrombus 4.0 by 3.0 by 2.0 cm. was fixed at one point to the anterior wall. Pressure on the wall of the conus easily displaced the thrombus upward and partially occluded the orifice of the pulmonary valve. This valve measured 9.0 cm. in circum-

ference and was covered with small verrucae but otherwise was normal in appearance. The left side of the heart and the valves therein were normal. The aortic orifice was in its normal position, and the interventricular septum was intact.

Additional findings included a recent infarct 4.0 cm. in diameter in the middle lobe of the right lung. No thrombi were found in the branches of the pulmonary vessels on gross examination. Microscopically, thrombi were seen in the small arteries and veins in the infarcted area. The age of the infarct was estimated to be approximately ten days. There were multiple small splenic infarcts. Unfortunately, examination of the brain was not permitted.

DISCUSSION

The cause of this man's sudden death is open to speculation. It is entirely possible that the large thrombus within the dilated pulmonary conus chamber produced occlusion of the pulmonary valve orifice through a ball-valve action. The explanation for the systolic murmur is obvious. It is suggested that the early diastolic murmur arose by regurgitation of blood from the dilated pulmonary conus through the orifice of the anomalous fibromuscular septum. Presumably the infarction of the right auricular appendage occurred as a result of thrombus formation which began in the cavity and extended into the Thebesian veins of the auricular wall. With the exception of this auricular appendage infarct there was no gross or microscopic evidence of myocardial infarction. The coronary arteries were normal. The splenic infarcts can be explained most satisfactorily by emboli arising from the thrombi in the smaller veins of the pulmonary circuit. The pulmonary infarction undoubtedly had been caused by an embolus from the right side of the heart.

SUMMARY

A case of stenosis of the pulmonary conus of the right ventricle at the lower orifice as the sole demonstrable cardiac anomaly in a 48 year old man is presented. The mechanism of the production of the associated murmurs is considered. The case was complicated by a superimposed subacute bacterial endocarditis with probable origin in an infected pilonidal sinus. A possible explanation for the unexpected sudden death is offered.

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State University of Iowa
College of Medicine

CLINICOPATHOLOGIC CONFERENCE
December 13, 1950

SUMMARY OF CLINICAL RECORD

WHEN THIS two and one-half month old white male infant was admitted to the University Hospitals, the parents stated that an abnormality of the spine had been discovered at birth. It was described as a "lemon-sized blister," filled with fluid, with thin walls. The child had been a full-term infant and birth had been spontaneous without the aid of instruments; the baby weighed eight pounds seven ounces. At the age of six weeks, the covering of the cyst had ulcerated, and the child was seen at this time by a surgeon who noted bilateral flaccid paralysis of the lower limbs. Roentgenography revealed a circular, soft tissue mass, seven centimeters in diameter, overlying the lower thoracic and entire lumbar and upper sacral areas posteriorly. At least two neural arches appeared to be open posteriorly, and an anomalous fusion of the right seventh and eighth ribs was exhibited. The sac-like mass was excised by the local surgeon. He reported that a defect about the size of an ordinary match head entered the spinal canal at about the level of the tenth dorsal vertebra. In the excised sac, several fine strands of thread-like nerves were noted. Microscopic examination revealed degenerated nerve tissue covered by squamous cell epithelium with dermal appendages and scattered glial tissue. The postoperative course was reported to have been uneventful with no further change in the neurological dysfunction.

At the time of admission to the University Hospitals, the baby weighed 12 pounds 8 ounces and was 25 inches tall. The head circumference was 46 centimeters. A well-healed scar was present over the lumbodorsal region. The vertebral spinous processes were widely separated. Roentgenograms showed a large skull with thinning of the tables and the lumbar spine exhibited widening of the pedicles. It was requested that the baby return at the age of six months.

On the second admission the parents stated that

the child had been well until the week previous to admission when he became irritable and cried in his sleep. He was constipated and the rectum prolapsed with each movement. The head circumference at this time was 53 centimeters. He could sit up only with help and was paralyzed for all movements below the mid-dorsal region. The baby presented a startled expression with much sclera visible above the cornea. He seemed alert and was able to follow a light. He jabbered in a manner appropriate for his age.

The anterior fontanelle admitted two fingertips. The child did not react to painful stimuli below

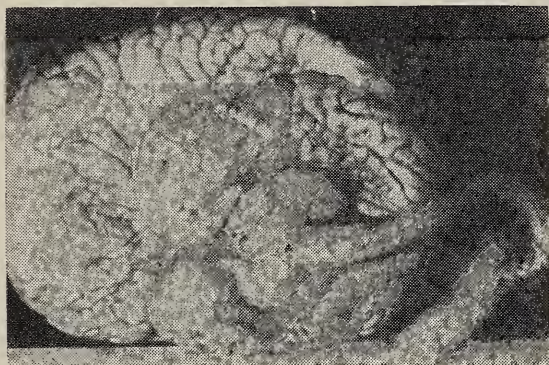


Fig. 1. Hydrocephalic brain with Arnold-Chiari malformation.

the level of the T-10 dermatome. Roentgenograms of the skull demonstrated a considerable increase in the size of the calvarium since the previous examination. The anterior fontanelle was bulging and evidence was present of suture separation. The spine revealed widening of the interpedicular spaces from L2 to S3. Five days after entrance, the subdural spaces, bilaterally, were aspirated with a number 20 gauge lumbar puncture needle. No evidence of subdural effusion was discovered. One cc. of phenolsulfonephthalein was then injected into the right lateral ventricle. A subarachnoid puncture was then accomplished in the upper lumbar region and a free flow of clear colorless fluid was obtained. Fluid was permitted to drip intermittently from the lumbar needle; after 40 minutes there was no evidence of dye in the lumbar spinal fluid. Four days later, ventriculography was carried out, following the removal of 60 cc. of pinkish fluid and fractional replacement with an equivalent amount of air. Roentgenograms revealed severe dilatation of the ventricular system with marked thinning of the cerebral cortex. Visualization of the third and fourth ventricle and the aqueduct of Silvius was not obtained. Intravenous pyelograms revealed excretion of dye in good concentration from both kidneys with no evidence of congenital genito-urinary abnormalities. An air myelogram four days later demonstrated fairly adequate visualization of the cervical vertebra. At this level, the air passed anteriorly into the cisternae pontis and interpeduncularis. There was no evidence of air posterior to the upper portion of the cervical canal. Fifteen days after entrance a

suboccipital craniectomy was carried out under intratracheal anesthesia. Shortly after the dura was opened the anesthesiologist announced that the child's heart had stopped beating. The wound was immediately packed and the patient who had been lying prone, was placed in the supine position. An incision was made immediately through an intercostal space and the surgeon's hand was inserted around the pericardium. It was found that the heart was beating at a rate estimated at 70 per minute. The child's respirations were manually controlled by the anesthesiologist. The estimated time between the first observation of cessation of cardiac rhythm and the opening of the chest was approximately five minutes. The color of the skin during this period was poor. The cardiac movements were observed for a short period during which the heart continued to beat with a steady rhythm. The baby then began to breathe spontaneously and its color gradually improved. The chest wound was, therefore, closed. Since an adequate decompression of the contents of the posterior fossa had not been accomplished, it was decided to continue the procedure.

A ventriculocisternostomy (Torkildsen procedure) was carried out, leading a soft rubber tube from the atrium of the lateral ventricle down the extradural space of the posterior fossa into the subarachnoid space of the upper cervical region. There was some difficulty in exposing the subarachnoid space in the upper cervical region, because of the presence of large masses of cerebellar tissue in this area. The anesthesiologist again announced that the heart had stopped beating and the wound was packed and the left chest was reopened. No cardiac activity could be seen. Approximately eight cc. of one-half per cent procaine was injected beneath the pericardium. Massage of the heart was carried out while the respirations were controlled by the anesthesiologist. No return of cardiac activity occurred after approximately 15 minutes of massage and the baby was pronounced dead.

Abstracted by Dr. Jess T. Schwidde, Neurosurgery.

NECROPSY FINDINGS

There was internal hydrocephalus of moderately severe degree with occipito-cranial circumference of 53 centimeters. There was extensive thinning of the cortex of the medial portions of the cerebral hemispheres, the corpus calosum was absent, apparently due to agenesis. The brain stem and cerebellum were partially extruded through the foramen magnum into the cervical spinal canal to produce a typical Arnold-Chiari deformity of the cerebellum, medulla and associated structures. The cerebral aqueduct was patent, and the obstructive hydrocephalus was apparently due to impaction of the herniated brain structures at the region of the foramen magnum and upper cervical spinal canal. There was incomplete development of the neural arches of the spine from the level of the

second lumbar vertebra to the first sacral vertebra with scarring in this area resulting from the operation for removal of the meningocele. The terminal portions of the cord were adherent to the mass of scar tissue, indicating that fixation of the cord at this point may have been responsible for the abnormal position of brain-structures at the foramen magnum. Incidental findings included a retention cyst of the left kidney and collapse of the left lung, secondary to the thoracotomy performed to facilitate cardiac massage.

Death was due to cardiac arrest, possibly caused by pressure changes affecting the medulla.

NECROPSY DIAGNOSIS

Arnold-Chiari deformity, cerebellum and brain stem.

Internal hydrocephalus, moderately severe.

Spina bifida manifesta, L-2 to S-1.

Lumbo-sacral myelomeningocele, history of, post-operative.

Agenesis of corpus callosum.

Massive collapse, left lung, secondary to thoracotomy.

Solitary retention cyst, left kidney.

Cardiac arrest (clinical).

CLINICAL DISCUSSION

Dr. Jess T. Schwidde, Neurosurgery: A two and one-half month old infant was brought into the Pediatric Clinic in July, 1949, where a diagnosis was made of malnutrition and postoperative myelomeningocele and hydrocephalus. The head circumference at that time was 46 cm., the baby's length 62 cm. He was returned to the Department of Surgery six months later at the age of eight and one-half months. During this interval he had been free of acute illness, had been constipated and continued to lag in development. The head circumference had increased from 46 to 53 cm. The following procedures are employed in investigating the case of enlargement of the head. The first two can be carried out simultaneously.

First, transfrontanel aspiration of the subdural space; second, the dye test for obstruction. The baby is placed with the suboccipital region on a sandbag and the head supported by an assistant holding his hands along the temporal region. After the head is shaved and prepared with some antiseptic which does not require much rubbing such as tincture of zephiran, a number 22 stilette type Pediatric LP needle is introduced through the lateral-most portion of the anterior fontanel. It is introduced in a diagonal manner through the skin and through the dura, then aspiration is made. Normally one obtains only one or two cc. of clear, colorless fluid. If a subdural effusion is present, one will obtain more voluminous amounts and it will usually be xanth ochromic or sanguineous. After the subdural aspiration has been carried out, one retracts the needle slightly and redirects it so that it then goes into the lateral ventricle.

Here one may inject one cc. of some dye, such as methylene blue, phenolsulfonthalein or indigo carmine. Then the needle is withdrawn. To be sure the injection of the material has been accomplished into the lateral ventricle, a similar procedure is carried out on the left side at once. In this manner it can be determined if the subdural space is clear on that side and at the same time fluid can be aspirated from that ventricle. If dye is obtained, the inference can be made that the injection has been truly intraventricular. Then a lumbar puncture is done and fluid permitted to drain intermittently for a variable length of time. Normally it is said, particularly with the baby erect, the dye should appear within 20 minutes. We usually follow these cases from 40 minutes to one hour and a half, maintaining the patient erect. In this case no phenolsulfonthalein was obtained after 40 minutes. Ventriculography is then employed in noncommunicating cases in an attempt to gain information regarding the site and the nature of the obstruction. In this case air was injected into the lumbar subarachnoid space in an effort to obtain a cervical myelogram. Because of the progressive hydrocephalus, the evidence of obstruction to the spinal fluid and the myelographic evidence of a filling defect in the upper cervical region, particularly posteriorly, a suboccipital craniectomy was carried out.

May we have the student opinion at this time?

Mr. John Sear, Student: The majority of the class felt that the primary diagnosis was the Arnold-Chiari malformation. We went on to discuss the case by suggesting an obstructive non-communicating hydrocephalus. A small minority mentioned a cerebellar tumor as well as another group which mentioned a combination of the Arnold-Chiari syndrome with an obstructive non-communicating hydrocephalus.

The cause of death was decided as due to cardiac arrest, the result either of manipulation or the hydrocephalus with compression on the nucleus of the vagus nerve with subsequent depression of the heart. We were wondering about the actual site of the injection of the procaine, whether it was just beneath the pericardium or actually into the heart.

Dr. Schwidde: In reference to the student's question, approximately eight cc. of one half per cent procaine was injected into the pericardial sac.

I want to describe this operation briefly. The dural sac, including the altanto-occipital membrane, bulged strikingly. The dura bled freely and the cerebral spinal fluid escaped under great pressure. It was the opinion of the surgeon on this case that the relatively sudden change in spinal fluid dynamics was the cause of the cardiac arrest. He attempted to establish a ventriculocisternostomy in an effort to shunt the ventricular fluid past the posterior fossa and into the cervical subarachnoid space. I think that the protocol contains a detailed account of the two episodes of cardiac difficulty and the failure of attempts at resuscitation.

Dr. Hesser will now review the historical background of this disorder.

Dr. Frederick H. Hesser, Neurology: This case represents a fairly typical example of the so-called Arnold-Chiari malformation, a term which, through common usage, has been applied to a condition of anomalous displacement of tongues of cerebellar tissue, especially the cerebellar tonsils and vermis along with the medulla oblongata, into the upper cervical canal. Various explanations have been offered to account for this defect, but none has been entirely satisfactory. The condition apparently represents a developmental disturbance occurring during intrauterine life. The fact that a variety of other structural abnormalities may accompany the Arnold-Chiari malformation would seem to indicate that it is fundamentally a disease of the germ plasm. Microgyria and other defects of the cerebral mantle may occur. Almost all cases are associated with myelomeningocele or spina bifida occulta, usually lumbar, but in some instances cervical. Syringomyelia, hydromyelia and even diplomyelia may be found in some instances. Skeletal deformities are prominent, particularly cranio-lacunia or "Luckenschadel." In this condition, x-rays of the skull reveal peculiar lacunar areas of radiolucency involving membranous bone and giving a sort of Swiss cheese appearance. Enlargement of the head due to hydrocephalus is common, but may appear only after surgical repair of the myelomeningocele, as in the case presented above. The Klippel-Feil deformity is seen in a small number of cases wherein there is fusion or absence of certain of the cervical vertebrae. About ten per cent of cases will be associated with basilar impresseure or platybasia wherein the posterior fossa is constricted due to upward mushrooming of the basilar plate. Some have felt that this contributes to the herniation of posterior fossa structures through the foramen magnum. However, the parenchymatous abnormalities are often too bizarre to be explained merely on the basis of downward crowding of the posterior fossa contents, either by hydrocephalus or constriction of the posterior fossa itself. In one reported instance the cerebellum filled the entire fourth ventricle as high as the aqueduct of Sylvius and reached into the central canal of the spinal cord as far down as the lumbar region.

Some have attempted to explain the deformity as a result of incarceration of the lower portion of the spinal cord and filum terminale by adhesions incident to the myelomeningocele so that the cord is pulled downward by the lengthening vertebral canal after the third fetal month. In some instances this seems to be true and section of the filum terminale and freeing of adhesions permits the cord to slip upward. In most of these cases the cervical spinal roots actually take an upward course after leaving the cord, apparently because of the downward traction just described. This situation was first described by Russell in 1935 and is now considered by many as an essential part of the

Arnold-Chiari malformation, though it was not mentioned by the original authors. Since the malformation can occur without these findings, however, the so-called "traction theory" does not provide a consistent explanation. In certain instances, overlapping occurs where the lower brain stem meets the upper cervical cord, ostensibly due to fore-shortening in this area. The bulge may actually have a nodular appearance at this level and has come to be known as the Chiari malformation. The downward herniation of cerebellar tissue and lower brain stem, on the other hand, has been defined as the Arnold malformation.

Actually, the first full credit for description of this condition should go to Chiari whose original paper appeared in 1891. He attempted to identify structural types and ultimately described four, the first two of which are commonly recognized. Chiari's first type included protrusion of the tonsils and inferior cerebellar lobes as a cork-like process accompanying the medulla oblongata into the spinal canal and occurring in symmetrical or asymmetrical fashion. This type of disturbance may be seen in any condition causing herniation of posterior fossa contents through the foramen magnum due to pressure from above. All of Chiari's cases in this group were associated with congenital internal hydrocephalus. His second type included displacement of portions of the inferior vermis, pons and the medulla and lengthening of the fourth ventricle into the spinal canal. In this group the nodular or step-like deformity of the brain stem and spinal cord was described. All cases within this group had congenital hydrocephalus and myelomeningocele. Chiari felt that the various defects were developmental except for the herniation which he considered due to hydrocephalus and downward pressure from above. Arnold, in 1894, described one case similar to Chiari's type II. The term Arnold and Chiari malformation was not applied until 1906 when two students of Arnold (Schwalbe and Gredig) gave full credit to their chief for describing the anomalous herniation of the cerebellar tonsils and gave credit to Chiari only for describing the kink-like formation found in almost all of his type II cases. Strikingly enough, this formulation of the eponym is now firmly established and for some reason has not to this day been criticized.

Clinically the Arnold-Chiari malformation should be suspected in any infant born with myelomeningocele, since it was found at operation or autopsy in 20 of 297 cases of myelomeningocele carefully studied by Ingraham. However, the defect may be present and produce few if any neurological signs for many years in those individuals who survive without any of the usually associated defects. In some cases the picture may be that of syringomyelia or syringobulbia; in others, progressive disability of the sort seen in multiple sclerosis may occur with outspoken cerebellar or pyramidal signs. Posterior fossa tumor has been sus-

pected in individuals with evidence of increasing intracranial pressure and posterior fossa involvement.

Dr. Eugene F. Van Epps, Radiology: Ventriculograms show considerable dilatation of the lateral ventricles with better filling on the right side. On the air myelogram there is evidence of air coming up posteriorly and being displaced posteriorly below the level of the foramen magnum. The anterior column of air arose vertically and gradually disappeared at or just below the foramen magnum. Drawing on the film of the narrow columns of air gave us the radiographic picture of a mass producing an obstruction. We thus felt that the mass represented herniated cerebellar tonsils through the foramen magnum, producing the so-called Arnold-Chiari malformation. We were not able to demonstrate any adhesions in the area, although they could have been present and not seen since the contrast given by the air myelogram was not great. Our final impression, therefore, was an obstructing lesion in the upper cervical region probably caused by an Arnold-Chiari malformation.

Dr. Philip C. Jeans, Pediatrics: There is one thing that has not been brought out sufficiently as far as I am concerned. In a rather high proportion of these cases, the hydrocephalus is of the communicating type. In this particular one, it happened to be non-communicating. This brings about the question of terminology and the use of words, what is obstructive and what is not. Even in the communicating type it is my concept that the hydrocephalus is still obstructive even though that is not the usual use of words. The obstruction is just in a different location in the pathway of the fluid around toward the cortex.

Dr. H. Russell Meyers, Neurosurgery: Along with Dr. Jeans, I feel there has been excellent coverage of the subject from the pathologic and to a certain extent from the pathogenetic standpoint. One of Dr. Jeans' problems apparently refers to the pathogenetic problem; i.e., how does the hydrocephalic problem come about in connection with the Arnold-Chiari malformation? If I understand him correctly, it is his notion that even in the so-called communicating type, hydrocephalus is still obstructive. This issue we may now pursue with some profit.

A good deal depends upon one's basic concepts, not only in regard to the use of the term obstructive, but also in regard to the use of the term hydrocephalus. Dr. Jeans has proposed the idea that all hydrocephalus is obstructive. It may be that in Pediatrics this is a useful notion. In Neurosurgery, however, we encounter conditions that are called non-communicative, non-obstructive hydrocephalus. This circumstance is also known as hydrocephalus ex vacuo and results from diffuse destruction or degeneration of brain tissue, such that gliosis takes place. In consequence, a general hemispherical shrinking supervenes and the ventricular spaces enlarge. The vacuum is filled, of course,

with cerebrospinal fluid and since this is excessive water, the term hydrocephalus is appropriate. Such a condition is not obstructive from any standpoint, physiologic, anatomic or pathologic. It may well be a static condition. However, it may be and often is progressive. Hence, it cannot accurately be stated that all progressive hydrocephalus is obstructive.

Turning now to the Arnold-Chiari malformation, we should note that many anomalies of brain, spinal cord, skull and spinal column have been noted to co-exist with this condition. Hydrocephalus, either obstructive or non-obstructive type, may be one of these concomitants, but it is certainly not a necessary accompaniment of it; neither, for that matter, is myelomeningocele. In fact, in May, 1950, Gardner and Goodall commented upon 34 cases in which myelomeningocele was not present. Seventeen of these cases were from their own series.

A good deal of confusion concerning the pathogenesis of any given case of hydrocephalus may prove to arise from a misunderstanding of the terms obstructive and non-obstructive, communicative and non-communicative. Clearly the condition of hydrocephalus ex vacuo is non-obstructive, there being no interference offered to the absorption of cerebrospinal fluid at any part of its circulation. On the other hand, the various hydrocephalies associated with intracranial hypertension may be regarded as obstructive from the anatomic and physiologic standpoints. The site of obstruction in such cases may be within the ventricular system or at the foramen magnum; at the foramina of Magendie and Luschka; in the aqueduct of Sylvius; at the incisural ring; or in the absorbing mechanisms distributed along the brain and spinal cord. In brief, then, hydrocephalus may be obstructive or non-obstructive, depending upon whether any barrier is offered to the absorption of cerebrospinal fluid or not.

When we employ the terms communicating and non-communicating, we leave the strictly physiologic and anatomic concepts and employ a clinical meaning. If a dye is instilled into the lateral ventricles of a normal individual, a specimen of cerebrospinal fluid obtained from the lumbar sac 15 or 20 minutes later will exhibit a portion of the dye. Such a circumstance demonstrates communication between the lateral ventricles and the lumbar thecal sac. Conversely, if after the introduction of the dye into the lateral ventricle, a portion of the dye is not recoverable within the time period referred to, we may speak of the existence of a non-communicating hydrocephalus. This simply means that under the test conditions just described, no communication between the lateral ventricles and the spinal subarachnoid space exists. Such a finding, although valuable in its own right, can obviously tell us nothing about where the block is, what the underlying pathogenetic mechanism of the block may be or what the etiologic and pathologic circumstances are which produce the

(Continued on Page 104)

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What Does the Training of Additional Medical Students Entail?

To those not familiar with the problems inherent in medical education, it may seem like a comparatively simple matter to increase the number of medical students. Many factors play a part in medical education, however, and the expansion of a medical school is a costly process.

Here in Iowa, two years ago the Fifty-third General Assembly considered withholding appropriations from the University until the admission of medical students was raised from 90 to 120 a year. The fact that such action was even considered shows a lack of knowledge of the problems involved.

Comparison was made of the enrollment in the thirties as opposed to today. Only 47.8 per cent, or 68 of 142 students, of the 1933 class were graduated. This means that more than half of those entering were educated for varying periods of time but failed to complete the course, thus wasting the time and money spent on them. Today greatly improved standards of selection have lowered the number of failure or withdrawals. Of 87 admissions to the class of 1947, 73 or 84 per cent were graduated.

The character of teaching, too, has altered greatly since 1933. At that time the emphasis was on lectures. The number attending made little difference and relatively few teachers were required. Today the emphasis is on the individual student. The most important teaching is done in the laboratory, at the bedside, in conferences and seminars.

This is the highest type of educational procedure but also the most expensive.

With an increase of students goes the need for greater laboratory space and more equipment and instructors. The first two years are devoted to a great deal of laboratory work. Today small classrooms are used. The addition of 30 students each year makes more such classrooms necessary. They must be well lighted because of blackboard teaching. Visual aids such as scientific movies and slides are utilized. They demand a darkened, well-ventilated room and a shielded light to permit note-taking. Television may also be utilized before too long.

Specifically, what are some of the problems at the University? They include the need for more space, more equipment, more instructors and a great deal more money. Some space has been gained by remodeling and use of new, streamlined equipment. A larger faculty will be necessary. It is felt that since medical science is advancing so rapidly, medical teachers should also be research workers. Again, this entails laboratory space, equipment and personnel. And back of all these needs is that of money—money to build and equip the physical plant needed for such a program and money to pay the salaries of the necessary teachers.

It is not our province to list in detail the askings of the University. The late Dean Soley had started a survey of the needs of the medical school prior to his death; it was completed by members of his faculty. An abstract of this may be found in the *Medical Bulletin* of November 15, 1950.

We of the medical profession in Iowa have an obligation to our medical school regardless of whether we were graduated there. We need its stimulation in medical advances; we need its aid in medical education and we need its support in medical practice. For our part we should be familiar with its needs and be willing to interpret them to the taxpayers and citizens who want more doctors trained.

Easter Seals

This is the time of year when the Iowa Society for Crippled Children and Adults conducts its Easter Seal campaign. Voluntary contributions



from residents of Iowa maintain a year round program of assistance to all handicapped persons in Iowa, no matter what the cause of disablement. A policy of nonduplication of services is maintained, yet many veterans are given assistance, many children afflicted with cerebral palsy and other physical handicaps are aided, and many adults find it possible to lead a near normal life after amputations or other handicaps.

That such a program is worthy of support is evi-

denced by the heartening fact that year after year more people contribute by purchasing Easter Seals. This year when you purchase your Easter Seals look upon them not as seals, but as the symbol of all the handicapped persons you have known. Then give for those people that they may be helped towards a more normal life.

Our Grievance Committee Is Functioning

The Grievance Committee may be new in the organization of the State Society but it has functioned actively in the nine months it has been in existence. It has held seven meetings in that time with never less than eight of its 11 members present. Quarterly reports have been made to the Board of Trustees.

When the committee was organized, it inherited a file of eight or ten complaints which had been sent to the central office. During the summer the Committee worked on these and others which were filed. Following the Medical-Press-Radio conference in September, where the work of the Committee was publicized, it experienced an increase in the number of grievances.

To date it has had 38 cases presented to it and of these it has settled 15. These come from all parts of the state and are of various types, providing a good cross section of what one would expect.

Cooperation from the profession has been excellent with only one exception. Both physicians and lay persons have complimented the Committee upon its handling of the grievances.

The most common bases for the complaints include remarks to a patient regarding another doctor's treatment or charges; discussion between doctors within earshot of patients regarding prognosis, severity of case, finances or general reputation; lack of diplomacy and tact in telephone conversations and in refusing to accept a case or make a call; patients misunderstanding or misquoting doctors; patients refusing to pay unless a favorable result or cure is obtained; guarantee of good results or a cure by the physician; lack of knowledge of prevailing fees; exorbitant fees (surprisingly few); poor results from surgery or traumatic cases; careless remarks of interns or students and negligence, actual or assumed.

Many of the above causes for grievance can be remedied easily by a little extra effort and thought on the part of the physician. As a matter of fact, it is encouraging to know that exorbitant fees and negligence play a small part in causing grievances. The little things which are responsible can so easily be corrected that a great deal of the trouble may be averted.

No physician likes to be criticized by his patients. We all feel we try to give good medical service and it is disheartening to have disgruntled patients. Possibly a study of these common causes

for grievances might help us to a better relationship with those we serve.

Dicumarol Can Be Dangerous

Reports of deaths due to hemorrhagic diatheses resulting from the use of dicumarol have been accumulating in the literature. Since the drug became available in 1941, overly enthusiastic reports leading to its general use prophylactically and therapeutically, coupled with the lack of adequate laboratory tests for its control, have resulted in an increased number of reported and unreported fatalities, according to Wright and Rothman.*

In a series of over 900 cases at Massachusetts General Hospital in which dicumarol was used prophylactically, there were no fatal pulmonary emboli, but there were two deaths from hemorrhage. In a comparable series of cases in which dicumarol was not used prophylactically there was no fatal pulmonary embolism.

The statistics available on pulmonary emboli were compiled before it became common practice to encourage early ambulation, early movement in bed, proper bed posture and better postoperative care, with respect to fluids, electrolyte and nitrogen balance. Evans and Boller, after a study of their series of 45,000 surgical cases at the Lahey Clinic, concluded that there was a one-third reduction in postoperative thromboembolic complications on this regimen.

De Takats feels that the so-called protective levels (20 to 30 per cent of normal prothrombin activity) cannot and should not be maintained in the ambulatory patient. He finds that the usual level of 50 per cent for an ambulatory patient is non-protective and he concludes that at present there is not a safe anticoagulant. In 1943 DeBakey cautioned against the promiscuous use of dicumarol and suggested that much safer procedures might produce the same result without subjecting the patient to the hazards of this particular drug.

A review of the literature reveals that the majority of the fatalities are caused by gross overdosage. In addition, poor results have occurred because of the lack of uniformity in prothrombin determinations. There is a burning need for a more standardized laboratory test that is simpler and more accurate. It is difficult to obtain a safe prothrombin level; moreover, a low prothrombin level does not necessarily prevent thrombus formation. Patients have been observed with low prothrombin formation in the liver; prothrombin determination alone does not give any indication of the thrombosing tendency. Ochsner and his co-workers have conducted investigations that suggest that intravascular clotting is determined by the relative disproportion between the prothrombin and the antithrombin levels of the blood; whenever the

*A.M.A. Arch. Surg., January, 1951, L. T. Wright and M. Rothman.

disproportion becomes great enough, intravascular clotting can occur. This may explain why thromboses develop in some patients with low prothrombin levels as a result of anticoagulant therapy.

Failure to recognize the limitations of tests for prothrombin time may obstruct effective therapy. Under the false impression that the patient is being protected from the thromboembolic complications by the use of dicumarol, one may withhold venous ligation until it is too late. It is the experience of most clinicians that persons with phlebotrombosis who are under anticoagulant therapy can have repeated pulmonary infarction and even fatal pulmonary embolism despite the fact that further coagulation is prevented by the anticoagulant. Vein interruption would appear to be a more certain and a much safer method of controlling phlebothrombosis and thrombophlebitis.

American Red Cross

As is customary the American National Red Cross makes its annual appeal for funds during the month of March. This year the Red Cross requests the help of every American not only in supplying needed funds for its expanded work for



the armed forces and civil defense but in recruiting volunteers to make this work possible.

In addition to continuing its regular work, the Red Cross has been asked to expand its activities to include three additional programs. First, the Secretary of Defense has asked the American Red Cross to be the official blood procurement agency for the needs of the armed forces. The National Security Resources Board also has requested that the Red Cross coordinate a nation-wide blood program for civil defense. Therefore, including its regular peacetime program, the Red Cross will be responsible for procuring large quantities of blood by the end of this fiscal year.

Second, the National Security Resources Board has asked the Red Cross to undertake the training of as many as 20 million persons in first aid, including all civil defense workers. This is no short-time job, and in accepting it, the Red Cross looks to the public both to fill classes and to help instruct those classes.

Third, in an emergency, hundreds of thousands

of women will have to give nursing care to their families and their neighbors. More hundreds of thousands will be needed to serve as nurses' aides in hospitals, at blood centers and emergency shelters. The Red Cross has accepted from the NSRB the responsibility for recruiting and training these women in home nursing courses and as nurses' aides.

To do its regular job as well as an emergency one, the Red Cross will need millions of volunteers—as blood donors, as nonprofessional workers in hospitals, as drivers for Motor Service and as other workers in connection with all local chapter needs. The Red Cross has a long history of trained volunteer service.

Every physician is asked to do his share in accepting the added responsibilities which have been added to the Red Cross program.

Progress Report on Nurses' Survey

The preliminary report of the findings of the nurses' survey will be ready for perusal in the near future. This survey, begun in 1950, is most extensive and will be of inestimable value to the hospitals, the physicians and the people of Iowa. It contains not only a census of the nurses in the state and their qualifications and employment, but an estimate of future needs. It covers private duty, hospital service, industrial nursing, public health, physicians' offices and nursing homes, to mention the most important. Registered and practical nurses are included.

Also included in the survey is a breakdown of enrollments in nursing schools and number of withdrawals or failures. This is comparable to a study of students enrolled at the medical school and the percentage of graduates. It may point to a need for improved methods of selectivity of enrollees and a change in nursing education.

One of the tabulations shows the patient load by departments in the various hospitals and the number of nurses necessary to handle such a load, thus pointing out areas of deficiency.

It is hoped that actual writing of this preliminary report may begin before the end of February. From it future activity may be charted. Hospitals and doctors will be concerned with the section dealing with nursing needs and actual nursing supply, the nursing schools themselves will be concerned with information about enrollees and failure percentages; and in addition will be much better informed of what the probable need for nurses will be in the next five years.

All in all, the survey will give direction to all future plans for nursing enrollment and nursing education and should be most helpful in enabling all persons involved to set up a program which will meet the needs of the state.

President's Page

In this issue of the *Journal* you will find the program for our annual meeting. As you know, it is to be held in the new auditorium at Sioux City. This building is excellent for a meeting like ours. It has a large ground floor area for exhibits, but this room can also be divided so as to make small meeting rooms when desired. Two of our section meetings will be held here.

The second floor, or main arena, is large. We will hold the general sessions at the south half of it. At the north will be our scientific exhibit section, and on the stage will be the surgical section. The stage is almost as large as any meeting room we have used in the past.

An outstanding program has been prepared. The meeting will start Monday morning, April 23, with the House of Delegates at 8:30. Every member of the Society is invited to attend this meeting, although only delegates can vote. Monday afternoon the first general session will be held.

Monday evening there will be a few special dinners and following them the Woodbury County Medical Society will entertain all doctors and their wives and guests at the Sioux City Club in the Warrior Hotel. This promises to be a gala affair.

Tuesday and Wednesday morning there will be general sessions and on both afternoons there will be section meetings. These will include medicine, surgery, eye, ear, nose and throat, pediatrics, obstetrics, mental health and traumatic injuries.

Tuesday evening the Physicians and Hospitals Supply Company of Minneapolis will be hosts at a social hour preceding the banquet. This will be held at the Hotel Martin. Wednesday morning the last session of the House of Delegates will be held in the auditorium at eight A.M., again open to all members. The sessions will close Wednesday afternoon at five. Make a note of this, since we ordinarily adjourn at noon on the last day.

The Scientific Exhibits Committee has assembled a record number of exhibits. These are being provided by Iowa physicians and by the State University of Iowa, Creighton, University of Nebraska, University of South Dakota, Mayo Clinic and Hektoen Institute. Scientific movies will be shown, and we plan also to have a hobby show. It has been several years since we have had a hobby show and we hope to have enough entries to make it possible. Any doctor who has a hobby is urged to exhibit.

Plan to attend the meeting and remember it will be a full three day session rather than two and a half as in the past.

T. F. Thornton, M. D.

President, Iowa State Medical Society



NEWS NOTES

From The Committee On Medical Service And Public Relations

BLUE CROSS-BLUE SHIELD CONFERENCE

The first joint Blue Cross-Blue Shield Hospital and Physician Relations Conference was held at the Knickerbocker Hotel, Chicago, February 1 to 3. The conference theme was "Prescription for Profitable Professional Relations."

In the past, Blue Cross hospital relations meetings have been held apart from Blue Shield physician relations sessions. Because of mutual problems confronting Blue Cross and Blue Shield in developing hospital and physician relations programs, the Commissions decided it was time for the two groups to begin working together toward better coordination of hospital and physician relations. Some time was spent dealing with Blue Shield relations but most of the discussion during the meeting concerned Blue Cross physician relations.

Theodore G. Klumpp, M.D., President of Winthrop-Stearns, Inc. of New York and O. B. Owens, M.D., Secretary, Blue Shield Medical Care Plans, Alexandria, La., gave their recommendations for improvements and expansions in Blue Cross and Blue Shield, which will put these plans in a position to oppose and refute any and all statements made by socialistic sympathizers that the people cannot be cared for through a voluntary method. These recommendations were:

- (1) Provide individual enrollment.
- (2) Prepare for drastic changes in economic conditions.
- (3) Study the possibility of multiplicity of contracts.
- (4) Cover the chronically ill and catastrophic.
- (5) Redress public thoughts and actions toward Blue Cross and Blue Shield.
- (6) Be certain that all members of Blue Cross and Blue Shield, regardless of their type of employment, are thoroughly indoctrinated in the plans' philosophy and know the benefits of them.
- (7) Make contact with the public through the doctors and hospitals.
- (8) Meet with hospital staffs, administrative employees, county medical societies and senior medical students.
- (9) Provide for the care of the indigent through Blue Cross and Blue Shield.

The general attitude of the speakers and discussants was that if Blue Cross is to succeed in providing hospital care through its present system, it must have complete support and cooperation not only from the hospitals but from the medical profession as well. It seemed to be taken for granted that Blue Shield plans are conducting effective physician relations programs and that it is time for Blue Cross to begin telling their story

to the doctors if they expect to stay in business.

Blue Cross is appealing to the profession to help reduce hospital costs. They want the physicians to assist them by keeping a close check on all orders for x-rays, laboratory services and medication and to discharge patients as soon as their condition permits. They ask the profession not to admit patients to a hospital who can be treated effectively at home. Many of these utilization safeguards have been suggested by physicians who are members of Blue Cross medical advisory committees. The above recommendations for physician cooperation were submitted by the Hospital Care Corporation of Cincinnati, Ohio, which has a medical advisory committee. The purposes of their medical advisory committee are:

(1) To advise and assist Blue Cross in adequately and properly meeting the hospital service needs of its members.

(2) To promote a program of education of the medical profession concerning the nonprofit prepayment plans—Blue Cross and Blue Shield, for meeting the health needs of a community.

(3) To promote and help coordinate a program of public education concerning the necessity of preserving the voluntary methods of meeting the health needs of the community.

The Iowa State Medical Society is considering the advisability of establishing such a committee.

VOLUNTARY HEALTH INSURANCE EXPANDS RAPIDLY

In a statement issued by Dr. Elmer L. Henderson of Louisville, Kentucky, President of the AMA, in the January 27 *Journal of the American Medical Association* he said, "Voluntary health insurance is spreading so rapidly that a coverage of 90,000,000 Americans against the major costs of illness should come within the next two or three years." Dr. Henderson said that between 70,000,000 and 72,000,000 now have some form of voluntary health insurance. During 1950 the Blue Shield plans of the Nation gained 5,000,000 new members, an all-time record growth.

"The Blue Cross hospital plans kept pace. They added more than 3,000,000 new members in 1950, carrying them beyond the 40,000,000 mark in total enrollment. Out of every premium dollar, Blue Cross plans are paying out close to 88 cents in benefits for services to their member patients."

"But the spirit of competition, of improvement, is by no means confined to the non-profit medical care plan. Final and complete figures from the insurance companies and the various other agencies in the health insurance field will not be available for several months."

WOMAN'S AUXILIARY to the IOWA STATE MEDICAL SOCIETY

Organized May 9, 1929, Des Moines, Iowa

Twenty-Second Annual Meeting

Sioux City, Iowa

Mrs. Claire H. Mitchell, President, Presiding

PROGRAM

Monday, April 23

- 1:30 p. m. Executive Board meeting—Warrior Hotel
4:00 p. m. Tea—Mrs. William H. Gibbon, 4214 Country Club Boulevard
Sioux City entertains doctors and wives—Warrior Hotel

Tuesday, April 24

Y. W. C. A.

- 9:00 a. m. Formal opening of 22nd Annual Meeting of Woman's Auxiliary
Invocation—Reverend George W. Dunn
Welcome—Mrs. Martin A. Blackstone, president, Woman's Auxiliary to the Woodbury County Medical Society
Response—Mrs. Howard W. Smith, president-elect, Woman's Auxiliary to the Iowa State Medical Society
Introductions
Panel Discussion—The Doctor's Wife and Her Privileges
Mrs. Thomas E. Kane, presiding
Coffee
Panel Discussion—Enjoy Your Privileges
Mrs. J. Donald Hennessy, presiding
1:00 p. m. Luncheon
Speaker: Dr. John W. Cline, president-elect, American Medical Association
Guests: Members of the Iowa State Medical Society
6:00 p. m. Social Hour
7:00 p. m. Iowa State Medical Society Banquet

Wednesday, April 25

Warrior Hotel

- 9:00 a. m. Business meeting
Minutes
Roll call—credentials
President's report—Mrs. Claire H. Mitchell
Officer's reports
Old business
New business
In Memorium—Mrs. Allan G. Felter
Report of Nominating Committee—Mrs. Lonnie A. Coffin, Chairman
Election of officers
Installation of officers—Mrs. James A. Downing
Inaugural address—Mrs. Howard W. Smith
Coffee
We Are an Auxiliary—Dr. Ransom D. Bernard, General Manager, Iowa State Medical Society
The Fifth Personal Foul—Dr. John I. Marker, Davenport
1:00 p. m. Luncheon—Sioux City Club at Warrior Hotel
Speaker—Mrs. Theodore E. Heinz, Greeley, Colo., National Chairman of Public Relations
Style show
Adjournment

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. CLAIRE H. MITCHELL, Indianola

President-Elect—MRS. HOWARD W. SMITH, Woodward

Secretary—MRS. RALPH J. SELMAN, Ottumwa

Treasurer—MRS. DWIGHT C. WIRTZ, 449-56th St., Des Moines

ANNUAL MEETING

Planning for the Annual Meeting of the Auxiliary to be held in Sioux City during April makes us aware that another year of the Auxiliary is about to end. It is with mingled feelings that I bring this year to a close. It has been a stimulating and informative one for your president.

I have been particularly fortunate in having such a splendid Board of Directors to carry on the many activities of the Auxiliary. All members have responded faithfully to the call for a meeting and have patiently sat through the hours of discussion necessary to carry out the Auxiliary's business. They deserve a vote of thanks from the membership. It is this united effort which brings strength to our Auxiliary.

Could you have traveled with the caravan as it went over the state this fall, you would agree with the suggestion made by our National President and be ready to carry it out. "Resolve that you will do your part, not as something required, but rather as something that is a privilege to be allowed to do—as an opportunity for service to others that rests with our group more than with any other."

The foundations of the Auxiliary—our traditions, ideals, objectives—are ours for the asking. We must continue building to benefit perpetually from the work that has been achieved.

This has been in our mind as we have built this program for our 1951 Annual Meeting. We think that you will find it informative, interesting and challenging.

I am looking forward to meeting all of you in Sioux City.

Mrs. Claire H. Mitchell, President

ACTIVITIES OF COUNTY AUXILIARIES

Following dinner with the doctors, on January 17, 13 members of the Dallas-Guthrie Auxiliary held their regular meeting at the Presbyterian Church at Panora. Annual reports were heard and Mrs. Howard W. Smith stressed nurse recruitment.

Through the courtesy of Dr. and Mrs. Howard W. Smith, Dr. and Mrs. Charles E. Porter and Mrs. C. M. Porter, 24 members of the Dallas-Guthrie Medical Society and Auxiliary enjoyed a turkey buffet dinner at the home of Dr. and Mrs. Smith at Woodward on February 4.

Mrs. Charles E. Porter

The annual meeting of the Pottawattamie County Auxiliary was held January 16 at the Hotel Chieftain in Council Bluffs. The following officers for 1951 were elected: president, Mrs. Abbott M. Dean; vice-president, Mrs. John Krettek; secretary, Mrs. Elmer Bean and treasurer, Mrs. Arthur M. Pedersen. Mrs. Helen Scharff, West Pottawattamie County Public Health Nurse, presented the film "Self Breast Examination for Cancer."

Mrs. Arthur M. Pedersen

Twenty members of the Webster County Auxiliary attended the dinner-meeting at the Warden Hotel in Fort Dodge December 20. After a talk by Mr. Stephen Jones, State Representative of the Iowa Society for Crippled Children, a decision was made to sponsor a "Craft and Hobby Show" in Fort Dodge on May 9, 10 and 11. The following officers for 1951 were elected: president, Mrs. Albert E. Acher; vice-president, Mrs. Charles J. Baker and secretary-treasurer, Mrs. Arch S. McMillen.

Mrs. Arch S. McMillen

Mrs. Howard H. Smead was elected president of the Polk County Auxiliary at its meeting January 26 at Younkers tearoom. Other officers elected were; president-elect, Mrs. Robert W. Hoffman; vice-president, Mrs. Nobel W. Irving; secretary, Mrs. Rutledge C. Schropp and treasurer, Mrs. Robert P. Mason.

The Auxiliary of the Boone County Medical Society met at the Lincoln restaurant in Boone January 16 for dinner and a business meeting. New officers for 1951 are: president, Mrs. Henry C. Scharnweber; vice-president, Mrs. Wallace H. Longworth; recording secretary, Mrs. Thomas E. Kane and corresponding secretary, Mrs. Hanley F. Jenkins.

The Wapello County Auxiliary had a dinner meeting February 6 at the home of Mrs. Glenn Blome in Ottumwa. The Auxiliary members voted to furnish a room at the new Ottumwa Hospital and each member is required to earn \$10 as her contribution towards the fund. Mrs. Edward B. Hoeven was recently elected president of the Auxiliary. Other officers elected include: vice-president, Mrs. Philip McIntosh; secretary, Mrs. Kenneth Lister and treasurer, Mrs. C. Ray Phelps.

STATE DEPARTMENT OF HEALTH

Walter Diering

INFLUENZA

The United States Public Health Service for the week ending January 13 summarized the influenza situation as follows: cases of influenza reported in the United States for the week ending January 13, 1951, 1,788; for the week ending January 14, 1950, 1,658 cases and for the five-year median (1946-1950) for the same week of January, 2,331. Reports for the week of February 3, 1951 were 2,519 cases as compared with 2,859 for the same week last year. Thus, to date there are no evidences of epidemic waves of influenza in the United States. Regarding the disease abroad and the strain of organism responsible they continue:

"As a not unexpected sequel of the local outbreak of influenza A-prime in Sweden in June, 1950, the disease appeared in Scandanavia early this winter, in Denmark in November, in Northern Sweden and Norway in late November, in Sweden generally in December. The Danish strain is an A-prime, apparently identical with that occurring in Sweden in June.

"Late in December, influenza appeared in northern England where a mild form seems to be widespread. Serological evidence suggests that it is type A, but the virus has not yet been isolated. The beginning of the outbreak around Newcastle suggests likelihood of importation from Scandanavia.

"(Note: No mortality data from official sources in England have been received by the National Office of Vital Statistics on which fatality rates can be based. It is reported that deaths from influenza and pneumonia during the past few weeks have occurred mainly among the aged and infirm.)

"The Weekly Epidemiological Record of the WHO for January 10, 1951, reports that an outbreak due to influenza virus type A in Spain has been confirmed by laboratory examination. An epidemic of influenza has been reported in Japan principally in the southern part during the early part of December, 1950. Laboratory examinations have confirmed the presence of type A virus in Fukouka prefecture, Yamanshi and Tokyo."

The Influenza Information Center at Bethesda, Md., reported January 27 that localized outbreaks in California and Michigan have been found to be caused by the A strain of the influenza virus.

The United States Advisory Committee in the World Health Organizations' Influenza Study program met in Washington January 18 and issued

the following opinions regarding the current influenza situation:

". . . At this time there is not reason to believe the present epidemic in England necessarily indicates there will be a serious or widespread epidemic in the United States this year. It is expected that some influenza will appear in the United States but that the disease will be like our recent experiences with influenza. It is recommended that for patients who have a severe influenza-like illness appropriate antibiotics be used. . . . There is no vaccine we can expect will protect with certainty."

Vaccine gives worth-while protection if it contains the strain or type of influenza responsible for the epidemic in question. All vaccines now manufactured contain both A and B strain. If it is the A strain that is active in Western Europe then the vaccine should give protection if that strain spreads into our country. Commercial vaccines are formalin killed preparations grown on chick embryo cultures. As a result their use is distinctly contraindicated for any person allergic to eggs.

The dosage is a single one cc. injection. Since full-scale protection lasts only about six to eight weeks a booster injection is advised if danger of infection is present subsequent to the period of protection given by the original injection.

England is currently reporting deaths in the aged and infirm who develop influenza. This is the usual story. Even allowing for relapses and long convalescent periods that can occur in any group, *uncomplicated influenza* is a self-limited disease and seldom causes death except in severely debilitated persons.

Attack rates may vary from 15 per cent of a population group to well over 60 per cent. Intimacy of contact as is occasioned in institutions is a factor in increasing the percentage of the group attacked.

There is no complete agreement as to who should take influenza vaccines even in the face of a threatening epidemic. Those persons or groups of persons who should receive first consideration for influenza vaccine are:

1. Persons who by previous experience know they are highly susceptible to influenza.
2. Persons whose work takes them over a wide territory and so increases their chances of exposure.
3. Debilitated persons to whom even an uncom-

plicated attack of influenza would present a severe hazard.

4. Institutionalized persons with poor comprehension of personal hygiene. Any upper respiratory infection spreads rapidly through these groups. Limited space for segregation of infected persons in institutions is often another argument there for establishing artificial immunity.

RABIES IN ANIMALS

The number of reported cases of rabies in animals in Iowa for 1950 increased 48 per cent over the number reported in 1949. The increase was noted in both domestic and wild animals. The summary of cases seems to indicate that the reservoir of rabies infection among the wild animals of Iowa is large. Yearly anti-rabies vaccination of the dogs of the state will protect them from becoming infected from rabid wild animals. Printed material concerning rabies and its control may be obtained from the Iowa State Department of Health.

County	1949 Total	1950 Total	Species of Animals, 1950
Appanoose	—	4	3 cats, 1 skunk
Benton	5	2	2 cows
Black Hawk	4	—	—
Boone	5	4	3 skunks, 1 fox
Bremer	—	2	1 dog, 1 skunk
Buchanan	—	5	2 cattle, 2 skunks, 1 cat
Buena Vista	2	3	2 cattle, 1 skunk
Calhoun	2	5	2 cattle, 1 dog, 2 skunks
Carroll	1	—	—
Cass	1	—	—
Cedar	3	9	1 fox, 5 cattle, 3 skunks
Cerro Gordo	—	1	1 skunk
Cherokee	—	3	2 skunks, 1 cat
Chickasaw	—	1	1 cat
Clarke	—	1	1 skunk
Clay	1	2	1 skunk, 1 cow
Clayton	2	2	1 dog, 1 skunk
Clinton	2	3	1 skunk, 1 raccoon, 1 cat
Crawford	2	1	1 cow
Dallas	9	4	2 dogs, 1 cow, 1 skunk
Davis	3	6	4 cats, 2 skunks
Decatur	3	1	1 ferret
Delaware	1	2	1 skunk, 1 fox
Des Moines	—	2	1 dog, 1 hog
Dickinson	6	5	2 cattle, 2 skunks, 1 dog
Dubuque	—	6	1 groundhog, 2 raccoons, 1 skunk, 2 foxes
Emmet	2	1	1 cow
Fayette	1	2	1 cow, 1 skunk
Floyd	3	—	—
Franklin	1	2	1 cow, 1 dog
Fremont	1	1	1 skunk
Greene	4	1	1 cat
Grundy	—	1	1 skunk
Guthrie	3	1	1 dog
Hamilton	1	1	1 skunk
Hancock	1	4	1 cow, 2 skunks, 1 cat
Hardin	1	—	—
Harrison	—	6	3 cattle, 3 skunks
Henry	—	3	1 fox, 1 cow, 1 skunk
Howard	—	1	1 dog
Humboldt	3	—	—
Ida	—	3	2 cows, 1 dog
Iowa	5	4	2 skunks, 1 hog, 1 cow
Jackson	2	1	1 dog
Jasper	1	9	1 horse, 2 skunks, 1 cat, 4 dogs, 1 cow
Jefferson	—	1	1 skunk
Johnson	11	14	6 skunks, 5 cattle, 1 fox, 1 hog, 1 dog
Jones	6	2	1 skunk, 1 cat
Keokuk	—	2	1 dog, 1 skunk
Kossuth	—	2	1 dog, 1 cat
Lee	1	—	—
Linn	2	1	1 dog
Lucas	—	2	2 dogs
Madison	1	5	3 cows, 2 dogs
Mahaska	1	1	1 raccoon
Marion	1	3	2 skunks, 1 cow
Marshall	6	9	4 cattle, 1 horse, 2 hogs, 1 skunk, 1 dog
Mitchell	—	2	2 skunks

Monona	1	—	—	—
Monroe	—	1	1	dog
Montgomery	2	—	—	—
Muscataine	4	5	3	skunks, 1 cat, 1 cow
O'Brien	1	3	2	skunks, 1 cow
Page	—	1	1	dog
Palo Alto	3	1	1	cat
Pocahontas	4	1	1	cat
Polk	65	123	114	dogs, 5 cats, 1 cow, 1 rabbit, 1 skunk, 1 hog
Pottawattamie	4	—	—	—
Poweshiek	6	6	1	skunk, 3 cows, 2 cats
Ringgold	—	1	1	cow
Sac	—	5	3	cattle, 1 hog, 1 dog
Scott	1	4	1	skunk, 2 dogs, 1 fox
Sioux	1	—	—	—
Story	6	20	8	skunks, 4 cats, 1 fox, 1 dog, 2 cows, 3 hogs, 1 horse
Tama	4	3	1	cat, 2 cattle
Taylor	1	—	—	—
Union	1	1	1	skunk
Van Buren	2	—	—	—
Warren	9	1	1	dog
Washington	1	8	1	cow, 1 squirrel, 4 skunks, 1 hog, 1 dog
Wayne	—	4	1	skunk, 1 dog, 1 cow, 1 raccoon
Webster	14	15	11	dogs, 2 cows, 2 hogs
Woodbury	—	2	2	dogs
Worth	—	3	1	hog, 1 skunk, 1 dog
Wright	12	6	2	dogs, 1 skunk, 3 cows
Total	252	373	—	—

MORBIDITY REPORT

Diseases	Jan. 1951	Dec. 1950	Jan. 1950	Most Cases Reported From These Counties:
Diphtheria	2	3	2	Chickasaw, Hamilton
Typhoid Fever	2	3	2	Dallas
Scarlet Fever	44	73	50	Des Moines, Grundy, Polk, Story
Smallpox	0	0	0	—
Measles	20	16	656	Des Moines, Polk, Story
Whooping Cough	18	42	36	Boone, Louisa, Scott
Brucellosis	24	52	15	Delaware, Cerro Gordo, Mahaska, Story (2 ea. to a county—others scattered)
Chickenpox	287	280	318	Black Hawk, Des Moines, Linn, Story
Influenza	0	0	1	—
Meningitis men.	3	3	5	Boone, Hamilton, Palo Alto
Mumps	256	164	248	Boone, Des Moines, Linn, Polk
Pneumonia	13	13	8	Des Moines (4), Union (2), others 1 to a county
Poliomyelitis	6	70	12	Scattered
Rabies in Animals	50	33	14	Johnson (4), Polk (12), Webster (6), others 1 or 2 to a county
Tuberculosis	51	96	56	For the state
Gonorrhea	70	65	50	For the state
Syphilis	126	167	181	For the state

CLINICOPATHOLOGIC CONFERENCE

(Continued from page 95)

block. The latter issues require investigation by other technics, such as pneumoencephalography, ventriculography and/or surgical exploration.

A non-communicating hydrocephalus is, as we have seen, not a necessary part of the picture of the Arnold-Chiari malformation. In each instance in which hydrocephalus presents, a decision must be made as to whether the process is or is not communicating. This can be done readily by the dye test. Communicating hydrocephalus suggests that there is an obstruction over the absorbing surfaces of the brain; a non-communicating hydrocephalus, on the other hand, directs attention at the lateral ventricles, the iter and the foramen magnum. It is evident that the surgical procedure adopted in each individual case depends upon the precise demonstration of the character of the hydrocephalus.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

CLINICAL THERAPEUTIC RADIOLOGY, edited by *U. V. Portmann, M.D.*, Head of Department of Therapeutic Radiology, Cleveland Clinic Foundation; Professor of Therapeutic Radiology, Bunts Educational Institute, Cleveland. Thomas Nelson and Sons, New York, 1950.

FUNCTIONAL ANATOMY OF THE LIMBS AND BACK, by *W. Henry Hollinshead, M.D., Ph.D.*, Head of the Section on Anatomy, Mayo Clinic, Rochester; Professor of Anatomy, Mayo Foundation, University of Minnesota. W. B. Saunders Co., Philadelphia, 1951. Price \$6.00.

PATHOLOGY IN GENERAL SURGERY, by *Paul W. Schafer, M.D.* The University of Chicago Press, Chicago, 1950. Price \$17.50.

PHYSICAL DIAGNOSIS, by *Ralph H. Major, M.D.*, Professor of Medicine, The University of Kansas. W. B. Saunders Co., Philadelphia, 1951. Price \$6.50.

SCIENCE OF HEALTH, by *Florence L. Meredith, B.Sc., M.D.*, Fellow of the American Medical, American Public Health and American Psychiatric Association. The Blakiston Co., Philadelphia, 1951. Price \$3.75.

THE 1950 YEAR BOOK OF DRUG THERAPY (October, 1949-September, 1950), edited by *Harry Beckman, M.D.*, Director, Department of Pharmacology, Marquette University School of Medicine. The Year Book Publishers, Inc., Chicago, 1951. Price \$5.00.

BOOK REVIEWS

UROLOGICAL SURGERY, by *Austin Dodson, M.D.* (The C. V. Mosby Co., St. Louis, \$13.50).

This is the second edition of this excellent urological surgical text which has been brought up to date by the author and others. Several of the chapters appear to be completely re-written, especially those on tuberculosis and urogenic vesicle dysfunction. As in the previous edition, this one is well illustrated with the author's description of technics in the various urological procedures, both major and minor. It has excellent chapters on the care and treatment of the prostate. It is an improved version of a text already well recommended to the general surgeon as well as urologist.—*C. W. Latchem, M.D.*

BLOOD AND PLASMA TRANSFUSION, by *Max Strumia, M.D.* and *John McGraw, Jr., M.D.* (F. A. Davis Co., Philadelphia, \$7.50).

This text represents a summary of the authors' experience in the management of the blood and plasma transfusion service at the Bryn Mawr Hospital. It completely reviews the subject of blood and plasma transfusions and contains a chapter on preparation of crystalloid solutions for parenteral use. Not only are the technical aspects of maintenance of blood and plasma banks discussed, but also the theoretical and clinical backgrounds for these procedures completely considered. Each chapter, in addition, contains a bibliography of the more recent references.

The subject matter is presented in a concise and clear manner throughout. Pictures and illustrations, as well as lists of equipment and complete details of all procedures are given. No phase of the problem of blood and plasma bank technic has been neglected. This book is

highly recommended, not only to practicing physicians, but the medical technician and nurse who are most frequently the participant in any blood bank program.—*W. Rindskopf, M.D.*

PHYSIOLOGY OF THE EYE, by *Arthur Linksz, M.D.* (Grune and Stratton, New York, \$7.50).

This volume possesses the qualities of being basic, practical, extremely accurate, lucid and adequate. The subject, is, of course, interesting only to those few individuals dealing with this type of work. It is cheering to read the author's preface, because it completely exposes his humility. This fact is most significant when one is aware of his profound knowledge of all that pertains to ophthalmology.

Three main divisions are presented. The physics of light is fully discussed and illustrated. The more technical problem of geometric optics is similarly handled. The points of clinical importance tucked away in this section are valuable to the ophthalmologist. Finally, the eye as an image-focusing mechanism is discussed. Once again a difficult subject is rendered clear and made fascinating.

All of us in this field are eagerly looking forward to the succeeding two volumes. Dr. Linksz' qualifications assure us of work on the same plane.—*P. Lambrecht, M.D.*

RENAL DISEASES, by *Elexious Bell, M.D.* (Lea and Febiger, Philadelphia, \$8.00).

The second edition of Dr. Bell's monograph on renal diseases shows no basic change from the first edition published in 1947. The material which serves as a basis for his observations has been enlarged by the inclusion of an additional 18,000 autopsies. The bibliographies following each section have been brought up-to-date and the chapters on tubular disease and extra-renal azotemia have been enlarged.

This text represents a most valuable reference book for both the internists, urologist and pathologist. To the reviewer's knowledge there is no other book which so well correlates the clinical and pathological findings in renal disease in such a concise, understandable and yet critical fashion.—*W. Rindskopf, M.D.*

ADVANCES IN INTERNAL MEDICINE, edited by *William Dock, M.D.* and *I. Snapper, M.D.* (The Year Book Publishers, Inc., Chicago, \$10.00).

This is the book I have been looking for. It is the fourth volume in a new series of review articles on currently interesting medical problems. The articles in this volume discuss nitrogen mustards, radioactive isotopes, brucellosis, neuromuscular disorders, sodium depletion therapy, anticoagulants, hepatitis and hepatic tests and physiology of hypertension. Each article is an up-to-date discussion by an experienced investigator about the problems in his field. This volume is an attempt on the part of the Year Book Publishers to digest instead of review the literature. The only dis-

advantage is an intentional one, namely, that each volume contains discussions on heterogeneous topics. I, for one, am going to include future volumes in my personal library.—*D. A. Glomset, M.D.*

THE MASK OF SANITY, by Hervey Cleckley, M.D. (The C. V. Mosby Co., St. Louis, \$6.50).

The second edition of Dr. Cleckley's study of psychopathy is of such scope as to make its use necessary by all physicians whose professional interest extends beyond the malfunction of a single part of an individual.

This study is of a type of patient who "could be called the forgotten man of psychiatry"—the psychopath. The author tries to define the term and to clarify the meaning of the diagnosis.

Further sections of the book concern themselves with presentation of case material, contrasting and comparing what Dr. Cleckley has diagnosed as "psychopathy" with other psychiatric syndromes. This material is presented logically and interestingly. However, this reviewer feels that too little of the "stories" deals with the intimate psychological life of the patient and too much with the environmental or factual life.

In subsequent sections the author presents various opinions, including his own, as to the etiology of this illness. Whether or not the reader agrees with Dr. Cleckley's conclusions is irrelevant; if reading the work has stimulated thought and greater understanding of this particularly difficult problem, the author will have achieved his stated purpose.—*H. V. Turner, M.D.*

PROCTOLOGY IN GENERAL PRACTICE, by J. Peerman Nesselrod, M.D. (W. B. Saunders, Co., Philadelphia, \$6.00).

This practical book, written by an able author for those interested in the general practice of proctology, is not intended to serve as a reference work. It includes a sufficient review of anatomy and physiology as a background and outlines in detail the diagnostic procedures necessary in the proper examination of a proctologic patient. A clear presentation of the various pathologic conditions in the colon and rectum is made from the standpoint of etiology and pathology, and appropriate therapy is clearly outlined. The reviewer believes that this is an excellent guide in its field.—*M. J. Rotkow, M.D.*

CLINICAL NUTRITION, edited by Norman Jolliffe, M.D.; F. F. Tisdall, M.D. and Paul Cannon, M.D. (Paul B. Hoeber, Inc., New York, \$12.00).

This book is a comprehensive study of all phases of nutrition, each being presented by different authorities with adequate backgrounds and resources to make subjects current. Divided into three sections, the first part of the book deals wholly with the diagnosis of nutritional deficiencies; the second with nutrient elements and the third with therapy and prevention.

The section on diagnosis goes into great detail on the history of food deficiencies. There is good correlation of findings, shown by graphs and tables on various staples of the average diet. The important relationship between various factors of food ingestion and assimilation are elaborated in a thorough but not too concise manner. Physical findings that are diagnostic or of diagnostic aid are not only well described but are illustrated with color plates. An entire chapter is devoted to X-ray find-

ings and interpretation of the usual and unusual deficiency states.

The second part of the volume dealing with nutrient elements gives a complete and detailed discussion of each element, from their sources through the processes of digestion and utilization. Each phase is adequately covered for each element, emphasis being put on the important relationship of each.

The third part of the book deals with treatment and prevention of dietary deficiencies and malnutrition. The chapters reiterate the significance of the earlier chapters and stress the importance of being certain of all facts and dysfunctions before therapy is started.

Having gone through the 878 pages of this text, I am of the opinion that answers to almost any problems of nutrition, large or small, can be found in as complete detail as one would desire.—*R. C. Porter, M.D.*

INTRODUCTION TO NEUROPATHOLOGY, by Samuel P. Hicks, M.D. and Shields Warren, M.D. (McGraw-Hill Book Co., New York, \$10.00).

The scope of this text is well stated in its title. Directed primarily to the medical student and trainee in neurological specialties and in pathology, it serves as an excellent guide to the beginner's first steps through the complexities of neuropathology.

The chapters are arranged in logical fashion according to etiology. Pictures are profuse and remarkably well done. The reviewer feels that the picturing of the histological sections from the more routine H. & E. and phosphotungstic acid stains is most valuable in that it gives the general pathologist a working tool in a medium in which he is more familiar.—*W. Rindskopf, M.D.*

THE ANTIHISTAMINES, by Samuel Feinberg, M.D., Saul Malkiel, M.D. and Alan Feinberg, M.D. (The Year Book Publishers, Inc., Chicago, \$4.00).

The authors present a fairly complete study of the antihistaminics in this book. This is evident by the 586 references for such a limited subject. The first part of the book covers experimental studies of the histamines and antihistaminics and their role in anaphylaxis. It is pointed out that, while the antihistamines are but a special category of spasmolytics, justification for their being classified as such is their high specificity in antagonizing the physiologic effects of histamines. Their high specificity excludes many compounds antagonistic to histaminics, such as atropine, epinephrine and aminophylline.

This book is worthy of space in any medical library. While somewhat overburdened by frequent references to the literature, it does contain full information regarding this relatively new and interesting subject.—*G. E. Mountain, M.D.*

1949 YEAR BOOK OF ORTHOPEDICS AND TRAUMATIC SURGERY, edited by Edward L. Compere, M.D. (The Year Book Publishers, Inc., Chicago, \$5.00).

Dr. Compere has once more prepared an excellent compilation of the advances made in orthopedic surgery during the year 1949. All physicians dealing with orthopedic and traumatic problems will again desire to have this book available for reference. These year books fill a place not duplicated in any other way. Those who wish to keep abreast of significant literature will find this year book an essential volume in their library.—*E. M. George, M.D.*

SOCIETY PROCEEDINGS

MEETINGS

Benton

The Benton County Medical Society met January 24 at the Virginia Gay Hospital in Vinton. The following officers were elected for 1951: president, Dr. Earl D. Lovett, Vinton and secretary-treasurer, Dr. Norman C. Knosp, Belle Plaine.

Black Hawk

At the regular meeting of the Black Hawk County Medical Society, held at the Russe'l Lamson Hotel in Waterloo, January 16, Dr. John H. Randall of the SUI Department of Obstetrics and Gynecology spoke on "Vaginal Relaxation and Prolapse."

Boone

Dr. Thomas E. Kane of Boone was elected president of the Boone County Medical Society at its annual meeting in Boone January 11. Other officers elected were: vice-president, Dr. Andrew W. Puntenney and secretary-treasurer, Dr. Henry C. Scharnweber, both of Boone.

Cerro Gordo

The Cerro Gordo County Medical Society held its monthly dinner meeting January 9 at the Hotel Hanford in Mason City. Dr. C. H. Millikan of the Mayo Clinic spoke on "Diagnosis and Treatment of Cerebral Vascular Accidents."

Dubuque

Dr. J. A. Bargaen and Dr. Harry M. Weber of the Mayo Clinic spoke on "Early Diagnosis of Gastrointestinal Cancer" at the meeting of the Dubuque County Medical Society January 9 at Bunker Hill in Dubuque.

Jackson

The Jackson County Medical Society recently elected the following officers for 1951: president, Dr. John A. Broman, Maquoketa; vice-president, Dr. Earl V. Andrew, Maquoketa and secretary-treasurer, Dr. Warren C. Zabloudil, Preston.

Johnson

The Johnson County Medical Society met February 7 at the Hotel Jefferson in Iowa City for a dinner meeting. Dr. William D. Paul of the SUI Department of Internal Medicine spoke on "Prevention and Treatment of Injuries to Athletes."

Linn

Dr. Alexander Marble of Boston spoke on "Present Day Trends in Diabetes" at the Linn County Medical Society meeting February 8 in Cedar Rapids.

Lyon

The Lyon County Medical Society recently re-elected Dr. Arthur C. Wubben of Rock Rapids as president for 1951. Other officers are: vice-president, Dr. Howard H. Gessford, George and secretary-treasurer, Dr. Stuart H. Cook, Rock Rapids.

Polk

Dr. George Crile, Jr. of Cleveland spoke on "Thyroid" at the Polk County Medical Society meeting February 21 at the Hotel Savery in Des Moines.

Union

Dr. Cyrus C. Rambo of Creston was elected president of the Union County Medical Society at its annual meeting recently in Creston. Other new officers include: vice-president, Dr. John L. Hoyt and secretary-treasurer, Dr. Harold J. Peggs, both of Creston.

Woodbury

The Woodbury County Medical Society met January 16 at the Mayfair Hotel in Sioux City. Dr. Carroll B. Larson, professor and head of the Orthopedics department at the State University of Iowa, spoke on "Fractures of the Hip."

PERSONALS

Dr. Walter D. Abbott of Des Moines spoke on "Nervous Tension" at a recent meeting of the Colfax Woman's Club.

Dr. Arlene M. Beal of Davenport spoke on "The Challenge of Sex Education" January 18 at a meeting of the Davenport Parent-Teachers Association.

Dr. Colburn H. Ellis, a Webster City physician for the past five years, has recently moved his practice to Garden City, Mo.

Dr. Walter E. Foley, Jr. has begun the practice of obstetrics and gynecology in Davenport. A graduate of the Stritch College of Medicine, Loyola University, Chicago, he recently completed his internship at the Cook County Hospital, Chicago.

Dr. Lorraine H. Frost discussed "Contagious Diseases of Children" January 6 at a meeting of the Child Study Club in Iowa City.

Dr. Preston E. Gibson of Davenport spoke on "The Progress of Pediatrics" at a recent meeting of the Davenport Rotarians.

Dr. George J. Klok of Council Bluffs spoke on "Children's Health and Habits" at a Parent-Teacher's Association meeting in Council Bluffs on January 16.

Dr. Raymond R. Rembolt, Iowa City, director of state services for crippled children and medical director of the Iowa Hospital School for Severely Handicapped Children, has been elected to membership in the American Academy of Cerebral Palsy. Dr. Rembolt is the first Iowan to be honored by the academy.

DEATH NOTICES

Dr. Asaph Arent, 73, who practiced medicine in Humboldt County for more than 45 years before illness necessitated his retirement, died at his home in Humboldt January 21. Dr. Arent graduated from the State University of Iowa College of Medicine in 1898 and began the practice of medicine in Rutland. Dr. Arent was a life member of the Humboldt County and Iowa State Medical Societies.

Dr. Aaron C. Conaway, 74, practicing physician in Marshalltown for more than 50 years, died February 2 at the St. Thomas Mercy Hospital in Marshalltown. Dr. Conaway was graduated from the Rush Medical College of Chicago in 1900. He was a life member of the Marshall and Iowa State Medical Societies.

Dr. Charles S. Krause, 75, Cedar Rapids surgeon, died February 2 in Cedar Rapids. Dr. Krause collapsed in the elevator of a downtown office building where he had his office. A 1904 graduate of the State University College of Medicine, he began the practice of medicine in Cedar Rapids in 1905. Dr. Krause was a member of the Linn County and Iowa State Medical Societies.

Dr. Allie Hoyt Wakeman, 76, retired Fort Dodge physician, died at the Lutheran Hospital in Fort Dodge February 6. Born in Sabula, she graduated from the Keokuk College of Medicine in 1901. Dr. Wakeman was a life member of the Webster County and Iowa State Medical Societies.

Dr. Edwin Bason Winnett, 66, Des Moines physician, died December 8 at his home. Dr. Winnett was graduated from the Drake University College of Medicine, Des Moines, in 1913. He was a member of the Polk County and Iowa State Medical Societies.

ROSTER OF IOWA PHYSICIANS IN MILITARY SERVICE

As of February 15, 1951

Alberts, M. E., Des Moines (Des Moines)	Lt. (jg), U.S.N.R.
Allen, M. B., Fort Dodge (Fort Riley, Kan.)	Capt., A.U.S.
Bartholomew, R. D., Lake City (Oakland, Calif.)	U.S.N.R.
Bartley, R. L., Sully (Pensacola, Fla.)	U.S.N.R.
Bliss, W. R., Ames (Chicago, Ill.)	Capt., A.U.S.
Camp, J. R., Thompson (San Diego, Calif.)	U.S.N.R.
Carson, R. W., Winterset (Camp Stoneman, Calif.)	A.U.S.
Coyne, K. M., Burlington (FPO San Francisco, Calif.)	Cmdr., U.S.N.R.
Dalager, R. D., Ottumwa (Junction City, Kan.)	A.U.S.
Goenne, W. C., Jr., Davenport (Tacoma, Wash.)	Major, A.U.S.
Johnson, F. N., Madrid (San Antonio, Texas)	1st Lt., A.U.S.
Johnson, M. H., Iowa City (Tacoma, Wash.)	Capt., A.U.S.
King, R. E., Des Moines (Camp Polk, La.)	Capt., A.U.S.
Krause, R. E., Ottumwa	
McCrary, W. A., Lake City (Fort Riley, Kan.)	1st Lt., A.U.S.
Mitchell, R. C., Iowa City (San Antonio, Texas)	1st Lt., A.U.S.
Montgomery, A. E., Jefferson (APO San Francisco, Calif.)	Lt. Col., A.U.S.
Morgan, J. T., Forest City (FPO San Francisco, Calif.)	
Robb, W. J., Cedar Rapids (San Diego, Calif.)	U.S.N.R.
Ruble, R. L., Nevada (Camp Chaffee, Ark.)	A.U.S.
Schultz, M. H., Waterloo (Rapid City, S. D.)	U.S.A.F.
Simonsen, M. H., Sioux City (Oakland, Calif.)	U.S.N.
Smith, C. B., Iowa City (Fort Jackson, S. C.)	A.U.S.
Smith, H. J., Des Moines (Des Moines)	Lt. Comdr., U.S.N.R.
Taylor, H. N., Iowa City	
Tempel, P. F., Steamboat Rock (Fort Riley, Kan.)	A.U.S.
Thomas, J. H., Sibley	U.S.A.F.
Thornton, T. F., Jr., Waterloo (Great Lakes, Ill.)	Lt., U.S.N.R.
Tice, W. K., Iowa City (APO San Francisco, Calif.)	A.U.S.
von Lackum, L. F., Oelwein (Oakland, Calif.)	Lt. (jg), U.S.N.R.
Walz, D. V., Le Mars	U.S.A.F.
Waldmann, W. B., Council Bluffs	
Wehrmacher, W. H., Iowa City (Oceanside, Calif.)	U.S.N.R.
*Wilkins, D. S., Iowa City (APO San Francisco, Calif.)	Capt., A.U.S.
Woolfolk, J. H., II, Waterloo (Weaver, S. D.)	U.S.A.F.

*Deceased.

The JOURNAL

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No. 4

Members of the Iowa State Medical Society:

The faculty of the College of Medicine again wishes to express its appreciation to the Iowa State Medical Society for the privilege of presenting the scientific portion of this issue of the *Journal of the Iowa State Medical Society*. It is a pleasure to present this material and to take this opportunity to extend greetings to the members of the profession from the State University of Iowa through its College of Medicine.

The administration of the College is still in the hands of an Executive Committee which was appointed by President Hancher upon the death of Dean Soley. During the past year the committee has come to realize more fully the administrative problems and difficulties to be encountered, particularly in connection with the expansion program of the medical school and in this time of national emergency. We appreciate the whole-hearted support which we have received from the Iowa State Medical Society and realize that without this support and backing it would be a hopeless task. We, of the Executive Committee, wish to take this opportunity to express our appreciation to the State Society and the members of the medical profession for their support and cooperation.

THE EXECUTIVE COMMITTEE
College of Medicine
State University of Iowa

NEW DEPARTMENT HEADS



Dr. Alson E. Braley

On July 1, 1950 Dr. Alson E. Braley assumed his duties as professor and head of the College of Medicine's Department of Ophthalmology. Dr. Braley succeeded Dr. Cecil S. O'Brien who resigned in October, 1949 after 25 years of headship of the department.

Dr. Braley came to the College of Medicine from his position as professor and chairman of the Department of Ophthalmology at the Postgraduate Medical School of New York University, Bellevue Medical Center, New York City.

Born at Lake Mills in 1906, Dr. Braley received his doctor of medicine degree from the State University of Iowa in 1931. He remained at the University Hospitals from 1931 to 1939, serving as intern, resident in pathology and resident and instructor in ophthalmology. Certified by the American Board of Ophthalmology in 1937, he was assistant professor of ophthalmology at Wayne University, Detroit, Mich. from 1939 to 1941 and had same capacity at Columbia University, New York City from 1941 to 1949 when he joined New York University.

Included in his society activities are memberships in the American Ophthalmological Society, the American Academy of Ophthalmology and Otolaryngology, the Association for Research in Ophthalmology, the New York Academy of Sciences, Sigma Xi, American Association for the Advancement of Science and the International Organization Against Trachoma.

Dr. Braley served as a commander in the United States Naval Reserve from 1943-1946.

Dr. Braley has done considerable research in the virus diseases of the conjunctiva. His researches have included studies on trachoma, inclusion conjunctivitis and epidemic keratoconjunctivitis. He was authored or co-authored more than 20 major articles on research in eye diseases.



Dr. Carroll B. Larson

Dr. Carroll B. Larson assumed his duties as professor and head of the College of Medicine's Department of Orthopedic Surgery on August 1, 1950. Dr. Larson succeeded Dr. Arthur Steindler, who retired January 1, 1949, following 33 years of service in that position.

Born at Council Bluffs in 1909, Dr. Larson received his bachelor of science degree from the State University of Iowa in 1931 and his doctor of medicine degree two years later. Following an internship and a two year residency at Santa Clara County Hospital, San Jose, Calif., Dr. Larson began orthopedic training at Children's Hospital, Massachusetts General Hospital, Boston. He remained a staff member of that institution until he accepted his new position at the College of Medicine. In addition he was an assistant at the Harvard University Medical School. He was certified by the American Board of Orthopedic Surgery in 1942.

His activity memberships include the American Medical Association, American Academy of Orthopedic Surgeons, American Board of Orthopedic Surgeons, American Rheumatic Society, Massachusetts Medical Society and the Boston Orthopedic Club. Dr. Larson was a member of the editorial board of the *New England Journal of Medicine*. He is licensed in California, Iowa and Massachusetts.

Following World War II, Dr. Larson presented a series of lectures on orthopedics in Norway and Sweden under the auspices of the governments of these countries. He was one of 12 orthopedic surgeons invited to England in 1949 on an exchange lectureship basis.

His research interests have been conducted mainly in arthroplasties of the hip joint. He has written widely for medical and scientific journals relative to orthopedic surgery and his special interest fields.

THE MEDICAL CARE OF CHILDREN WITH PAROXYSMAL CONVULSIVE DISORDERS

JOHN C. MacQUEEN, M.D.*
IOWA CITY

DEPARTMENT OF PEDIATRICS
COLLEGE OF MEDICINE, STATE UNIVERSITY OF IOWA

IN THE PAST, the medical care of patients with convulsive disorders has not been well organized. Teaching material concerning these patients frequently was limited to the description of the classical clinical types of epileptic seizures. As a result, emphasis has been placed chiefly on the type of seizure, with too little emphasis directed toward the possible causative factors and toward the consideration of the whole patient's present and future welfare. Improved methods for the care of these patients is the more important when we realize their prevalence: probably 800,000 persons in this country have some degree of paroxysmal disorder, even though only about one out of ten needs institutional care.

Lack of organization of medical care for patients with convulsive disorders is understandable when we recall that many of the procedures and aids used for diagnosis, and most of the effective therapeutic drugs for this group of patients have been introduced only within the past few years. Without such facilities, convulsive disorder clinics would be greatly limited in the amount of information which they could adduce and the value they could offer their patients. With improved facilities such as now are available, convulsive disorder clinics already have collected an impressive amount of information concerning the care of children with paroxysmal disorders. Unfortunately, much of this information has not yet been well distributed to the practicing physician.

It would seem desirable to outline, in as specific a manner as possible, what the attending physician can do to provide optimal care for the child with a convulsive disorder.

The physician should make every effort to determine the causative factors of the convulsive disorder.

During infancy and early childhood, the most common cause of seizures is organic disease.

Continuous progress is being made in methods of identifying disease processes resulting in seizures. Emotional and psychological problems must be recognized among the potential causative factors.

The physician should supervise an appropriate and prolonged course of anticonvulsant drug therapy.

Each classification of seizures indicates the use of certain drugs.

New anticonvulsant drugs are continuing to be perfected.

The pitfalls of drug therapy necessitate close medical supervision.

The physician should recognize that continued counseling and planning is part of the medical care of the child with a convulsive disorder.

The majority of these patients need help with personality disturbances.

The parents of these children need information about their children and the disease.

The child's physical restrictions are best outlined by the physician.

The plans for school attendance and vocational planning are part of medical care.

The physician should make every effort to determine the causative factors of the convulsive disorder.

The recognition and description of the different types of seizures is as old as recorded medical literature. The descriptions of different types of seizures, of the more common ages of onset and of the cyclic nature of seizures are examples of medical information recorded when the cause of all seizures was thought to be a visitation by a god.¹ To them, truly, the cause of seizures was "cryptogenic," hidden.

In the matter of determining the cause of convulsions, we have made considerable progress. We have learned much; we have much to learn. The time is past when it could be considered an acceptable medical practice to place the patient who has a "fit" in the category of "cryptogenic epilepsy" without an effort being made to determine the cause of the seizure.

Increasing numbers of surgical procedures used for diagnosis continue to improve the effectiveness of our diagnostic efforts. Roentgenographic examinations are of value in the identification of anatomical variations of the central nervous system that cause convulsions. The clinical roentgenologist can now recognize congenital anomalies² and small, but important, variations of the central nervous system that were not recognized a few years ago.

The electroencephalogram is proving itself of increasing value as a supplementary diagnostic medium. The correlation of EEG patterns with clinical information has led to recent major strides in the identification and therapy of "petit mal" epilepsy.³

Progress in the field of diagnosis has not been confined to new procedures and complicated gadgets. Many complete clinical studies of individual children with convulsive disorders have been accumulated and made available for study. Such studies provide much information of value in clinical diagnosis. More than this: they have alerted us to the importance of data concerning the patient's birth and his neonatal period. They have

*Pediatric Consultant for State Services for Crippled Children.

(Personal clinical references mentioned in this presentation refer to children seen in the Pediatric Convulsive Disorder Clinic which is conducted in the Children's Hospital at Iowa City, as a part of the program of the Department of Pediatrics and of the State Services for Crippled Children.)

alerted us to the importance of applying various clinical criteria when evaluating so-called "febrile convulsions."⁴ They serve to warn us against classifying every atypical, minor attack in the small child as "petit mal."

There seems no doubt that emotional and psychological factors affect the incidence of seizures much more than we have appreciated. All who have had the care of these patients have heard the mother state as a part of the medical history, "his attacks increase, when he is nervous," or "when company comes," or "when he is having his examinations." In the older patient, the history may indicate that the seizures occur only at the time of severe anxiety or psychologic shock.

It is easy for one to become unduly impressed with the large number of patients, especially older patients, whose seizures have no explainable cause and so for the moment may be considered as "cryptogenic." If we review records of cases listed as "cryptogenic epilepsy" a few years ago, frequently we now can identify some disease as a presumable cause.

Progress in determining the causes of seizures is not rapid, but it continues. There is little doubt that the key to many of the remaining puzzling problems will be found through cellular pathophysiology research.

The physician should supervise an appropriate and prolonged course of anticonvulsant drug therapy. -

As we come to recognize more disease processes that cause seizures, we find more diseases that require specific therapy. The subdural hematoma requires the indicated surgical procedure.⁵ Spontaneous hypoglycemia requires ACTH therapy.⁶

The truth of the matter is well known—most medical therapy for older patients remains symptomatic drug therapy. It is a matter of using appropriate drugs on a trial and error basis.

The fact that phenobarbital was introduced in 1904, Dilantin in 1939 and Tridione in 1945, emphasizes how recently major contributions in drug therapy have occurred. Other desirable anticonvulsant drugs are on the market. Drugs now being used experimentally promise additional successful therapy for the future.

Although there might be some controversy concerning the following, it is an adequate middle of the road guide for "appropriate drug therapy." For small children phenobarbital and Meberal remain the drugs of choice. Major motor seizures respond best to Dilantin, Mesantoin, Thiantoin, sodium, phenobarbital and Meberal. Tridione remains specific for "petit mal" attacks. Combinations of phenobarbital and any of the other drugs are used commonly and effectively.

There are many pitfalls in drug therapy. Not the least of these is drug intolerance. If any unfavorable change occurs in the patient's seizure pattern following the administration of anticonvulsant therapy, the possibility of an untoward drug reaction

should be considered. In our experience, phenobarbital is one of the common offenders. Its use may result in excitation and an increasing number of seizures.

Another problem occurs as we try, in haste, to find the "appropriate drug." We change drugs too rapidly. This, to say the least, makes an evaluation of the effectiveness of the drug impossible. It may, in fact, seriously increase the severity and frequency of the patient's seizures. A drug that will seem entirely ineffective when used for a matter of days may, with continued use, result in adequate control. Warnings should be repeated concerning the acute withdrawal symptoms that occur when anticonvulsive drugs are rapidly discontinued.

One of the most common errors in anticonvulsant drug therapy is the acceptance of a fair level of seizure control after only one or two "appropriate drugs" have been tried. No level of control of seizures, short of complete control, should be accepted as the best obtainable until all "appropriate drugs" have been used for trial periods. If a drug is unsatisfactory and another is to be tried, a slowly increasing dosage of the new drug is given while the previous drug is slowly withdrawn. This avoids the dangers of withdrawal of therapy and avoids the possible onset of numerous seizures if the new drug proves inadequate.

No child with a convulsive disorder receives adequate care if drug therapy is the only approach the physician uses to treat the patient. The physician must think of his patient as a person. He must think of him also as a person who will, of necessity, make some adjustments. If the patient has too many difficulties with these adjustments, drug therapy will be most difficult.

The physician should recognize that continued counselling and planning is part of the medical care of the child with a convulsive disorder.

The simplest part of the care of the child with a convulsive disorder is the administration of anticonvulsant medicine. The most difficult part is the guidance and planning required to insure an optimal emotional and social adjustment to his disease.

Frequently the history is given that the onset of the seizures coincides with unfavorable personality changes. Some children, seemingly, adjust well to the disease and the physical and social limitations. The majority, however, have some personality difficulties.⁷ The most common problems are those related to insecurity reactions. The insecurity of the patient concerned, consciously or unconsciously, with the thought, "Will I now have an attack?," is not difficult to appreciate. This insecurity is an expression of the patient's apprehension in having lost confidence that his body will continue to perform normally. The aggressive child may attempt to cover up his insecurity and concern of family or social rejection. He may do so by becoming a disciplinary problem—antagonistic and resentful of all control. He may have temper out-

bursts. He may be the family or neighborhood bully. By performing these types of activity, he is actively resisting his lot. The less aggressive child may be overwhelmed by the disease and its implications. He will withdraw to avoid comparative exposure and so will become shy, resentful of criticism, or dependent.

Too frequently these changes in personality are referred to as "part of the disease," "to be expected" or, in older patients, "an epileptic personality." The above listed personality disorders are, in fact, the common personality disorders in any group of children. The child with epilepsy, because of his handicap, makes his normal adjustments less satisfactorily. This results in an accentuation of personality disorders.

The epileptic child's home must be for him a source of encouragement and understanding. It is the physician's part to help the child's parents develop such an environment.

Some parents of children with convulsive disorders confide that the seizures have resulted in a barrier arising between them and their child. They have difficulty in feeling their previous love for the child. Some parents feel that the disease is a family disgrace. Confinement of the child to the home is not infrequent. If one of the parents has a family history of epilepsy, and this has been pointed out to be a possible cause of the child's disease, he may feel guilty about his part in causing the child's illness. Some parents have trouble in accepting the diagnosis, and in using the word "epilepsy." Some others may think only in terms of institutional placement.

These parents need a lot of help with their problem. Specifically, they need to know more about their child, his problems and his disease. When this material has been discussed with them, many of their problems are resolved.

One of the most common questions asked by parents is, "How much should his play be restricted?"

Complete physical activity is most helpful in achieving successful drug therapy. It can be shown that physical exercise and mental preoccupation decrease the frequency of seizures. Restrictions emphasize to the patient that he is different and so will increase his problem of social adjustment.

The ideal of complete activity must be tempered by good judgment and an understanding of the risk incidence among such patients. It is the agreed opinion of all who work in the field that the margin of safety for these patients is greater than it might seem. There is so much to be gained by suggesting few restrictions that reasonable risks are justified. It becomes a matter of a calculated risk. However, these risks must not endanger the safety of others. A word of caution must be given concerning excessive activity by the patient who has a history of seizures related to physical fatigue. It is impossible to give exact rules to be used in determining the degree of activity that is desirable and safe

for all patients. It must be an individualized decision made by the physician.

In our culture, school attendance is almost a "must" for "normal" development. The statement can be made that it is most desirable for children with seizures to attend school. It is not only for the sake of his education that we wish to keep the child in school, but because there he has a greater chance to develop a normal personality. Lennox has said, "to remove the epileptic patient from school is like putting him in a wheel chair."⁸

The key person in this problem frequently is the child's school teacher. The physician should take the initiative to personally discuss the child and his disease with the teacher. This is of equal importance when starting drug therapy. The often repeated phrase that "the attack upsets the other children" is the teacher's common reaction to the seizure. She should be forewarned of the type of seizures and the care of such patients. The teacher should be acquainted with the possible variations in the child's mental acumen that will accompany seizures or drug dosage.

The teacher who speaks to the other pupils, suggesting that they disregard the child's disease, can greatly increase his acceptance by the other members of the class. An interested and understanding teacher can be the epileptic child's most helpful friend.

A complete psychometric examination will provide the teacher with information about the type of work the child can do with ease and the type that will be done with difficulty. It will try to determine his proper grade placement on the basis of his ability. An additional handicap, concern about school work, might well make drug control impossible.

It is not uncommon for the older child to be removed from public school prior to completion of his basic education. Many of these children are by no means candidates for institutionalization. Every effort should be made to acquire some form of home teaching.* Further education may well make the difference between a person with a handicap who is self-supporting and a person who will drift, by default, into institutional care.

As these children grow older, they must have some goals and plans for their future. Such goals can be encouraged by the early introduction of plans for specialized vocational guidance.* By the time the patients are old enough for such help, the pattern of their seizures is usually clear enough to allow such planning.

SUMMARY

We feel that there is a need for convulsive disorder clinics. There special diagnostic procedures can be done, and experimental drugs can be evaluated. Clinical records of large numbers of pa-

*Special Education Division of the State Department of Public Instruction, Des Moines, Iowa.

*The State Vocational Rehabilitation Division, Des Moines, Iowa.

tients can be kept for clinical study. But, the most important person who has to do with the care of the child with a convulsive disorder is the family physician. The physician's interest in the child, his knowledge of the disease, and his imagination in overcoming problems, will determine to a great extent whether optimal care is given.

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A DISCUSSION OF THE NEUROLOGICAL BASIS FOR SEIZURES

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"An epileptic seizure is produced by intense spontaneous local activity of nerve cells. This spontaneous outbreak of neuronal discharge begins with a small area of gray matter, and, as it spreads, adjacent cells begin to fire as though each contained a charge ready to be exploded. This state of abnormal activity may remain localized and eventually die out, or it may spread across the surface of the cortex, revealing something about the nature of the function of each new area that is fired off.

"The state, however, may also spread by neuronal pathways to a distance, and is then likely to result in a generalized seizure which means that the motor mechanism of both hemispheres . . . is discharging. Unconsciousness is the invariable accompaniment of generalization of the attack. If the original discharge occurs in some subcortical center which has ready access to both hemispheres, the attack may seem to be generalized from the beginning.

"If, on the other hand, the focal origin of the seizure is in the ganglionic mantle of the cortex, it usually remains localized, for a time at least, and we are apt to call it focal. As a matter of fact, however, we believe the discharge begins as a local phenomenon even when it originates at the highest level with immediate unconsciousness followed by generalized movement."

—Penfield and Rasmussen, *The Cerebral Cortex of Man*, p. 160.¹

THIS concise statement perhaps epitomizes contemporary thought on epilepsy. While there is great

interest in epilepsy as a clinical problem, the scientist is also interested in the anatomical and physiological problems presented by the neurological activities producing seizures. It must be emphasized that basic knowledge, neurophysiological and anatomic, as well as clinical, has been greatly advanced by study of epilepsy in the clinic, operating room and laboratory. The material covered in the present review has been reported and discussed by the leading investigators of the field, and the author, who claims no authority, urges the interested physician to read the fascinating works which we owe to Penfield,^{1,2,3,4,5} Gibbs,^{6,7} Lennox,⁸ Jasper,^{9,10} Rasmussen,¹ McCulloch,¹¹ Walker¹² and others.

Although experimental work has supplemented clinical observation in this field, fundamental investigation of the physiology of neuronal activity has not yet revealed the nature of seizure discharges and probably will not until the nature of the nervous impulse and synaptic transmission are understood. The epileptic discharge is obviously abnormal, but does it depend upon abnormal neuronal activity and the production of abnormal nervous impulses, or is it due to excessive synchronization of normal impulses? To what extent does it depend on variation of excitability in the brain—due to facilitation, neighboring neuronal activity or changes in acid-alkaline balance? Is the phase of unconsciousness due to extinction of neuronal activity such as may normally follow violent activity? We cannot answer these questions, but we may, however, within limitations, advance hypotheses in accord with such facts as we possess, as witness the quotation above.

Cortical foci of epileptic activity are often associated with the presence nearby of meningo-cerebral scars, cysts, tumors or areas of atrophy. Penfield and Steelman³ propose that the presence of such conditions produces a partial circulatory disruption which leaves some of the cells surviving nearby in an abnormal state, which is perhaps supernormal in that spontaneous neuronal activity is increased. This increase is called the epileptogenic factor. No hypothesis as to the epileptogenic factor in "idiopathic" epilepsy has been proposed, for there are no visible abnormal foci in that condition.

Despite the flaws in our fundamental knowledge, the careful clinical study of seizures has added greatly to knowledge of the brain and its functions and has opened new routes for exploration. Study of focal seizures has been especially fruitful, since this type is most susceptible to surgical exploration and treatment. The physiologically-minded surgeon is able to localize foci by the nature of the seizure and by the electroencephalogram, can approach the brain directly and seek confirmation by stimulation of appropriate cortical areas, recording his findings accurately from motor signs and the sensory reports of the patient. He can also study the brain waves picked up directly from the cortex. When it is necessary to excise portions of the brain, the effects of such excisions

upon the activities of the organism may be noted and recorded. The work of Penfield's group is a noteworthy example of such effort.

The authorities have classified focal seizures according to the phenomena accompanying the fit and according to the brain areas concerned with those phenomena. Thus we have seizures of the following types: (1) Jacksonian motor, (2) Somatosensory, (3) Auditory, (4) Vertiginous, (5) Visual and (6) Psychical. Seizures of any local origin may spread to involve adjacent areas and may become generalized. If the fit does not involve the areas concerned with consciousness, there is no loss of the latter. Many of these types of seizures may be produced or initiated experimentally by appropriate stimulation of the cerebral cortex in

stimulation of the cortex are said to resemble those of Jacksonian seizures.

Stimulation of sensory areas in the conscious human subject also evokes responses in the form of relatively crude sensory impressions which apparently resemble the sensory seizures which arise from certain cortical foci. If discharges of this type spread to motor regions and movement ensues the sensory element is called an aura. The latter are, however, true seizures and show the electroencephalographic characteristics of a seizure even when motor activation is not present.

NEUROANATOMIC AREAS

A summary of some of the areas which are sites of origin for epileptic attacks may be of interest.

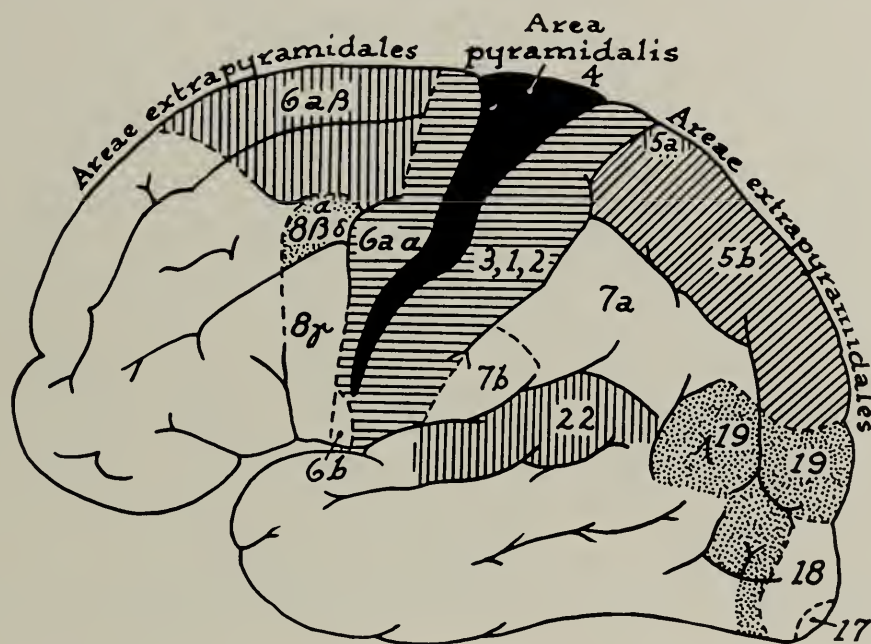


Fig. 1. Schematic representation of some of the cortical areas on the dorsolateral aspect of the hemisphere. The pyramidal motor area is black. (From Buchanan, after Foerster.)

animals and in man. It has been known since 1870 that electrical stimulation of certain regions of the cortex produces movements on the opposite side of the body. Through the years such observations have been extended and have accrued to form a complex picture. Such movements are most readily produced by stimulation of the anterior central gyrus, or the part of it called area 4, the primary motor area, and are usually restricted and discrete, i.e. movement of a finger, a toe or the corner of the mouth, according to the point stimulated. However, movement may also be produced by stimulation outside of area 4, even from so-called sensory zones. If discrete, the movements thus evoked are brought about through pathways which include area 4, and if the latter is excised such responses cease. More complex movements such as the turning movements which may be elicited from the premotor frontal areas (including area 6) are not mediated by area 4 (Figure 1). It is significant that the movements produced in man by localized

1. The motor area bordering the central sulcus. We have already mentioned the localized movements produced by stimulation of area 4. Jacksonian motor seizures without aura are believed to be caused by irritation due to pathological processes in or near this region. A discharge originating here may, in part because of facilitation, spread to adjacent and distant motor foci and be propagated peripherally even to the point of generalized convulsions. In the latter case a lapse of consciousness occurs. After such violent discharges there is sometimes suppression of excitability of the motor neurons and there may be a transient post-paroxysmal paresis. This depression or extinction is also observed after electrical stimulation of the motor area.¹³

It is apparent that Jacksonian seizures give valuable diagnostic information in localizing cortical lesions. Since stimulation of a restricted cortical area causes contraction of a certain muscle or group of muscles while stimulation of other points

affects other muscles, and since these regions have been well mapped, exact observation as to the peripheral starting point of the fit supplies information as to the site of origin of the central paroxysmal discharge. Observations on patients of this type have thus confirmed and extended the findings of physiologists and anatomists working on lower forms.

2. The sensory area of the post-central gyrus (area 3, 1, 2). An epileptic discharge from this area produces a sensation of tingling or numbness or of movement of a part on the opposite side of the body, localized according to the point of irritation in the gyrus. If the discharge spreads to the precentral gyrus a Jacksonian motor fit takes place and the primary sensory fit is called an aura. In

Discharges originating in these regions produce visual and auditory sensory seizures. The visual and auditory impressions thus produced are simple and possess no qualities which would ally them to learned or remembered sights or sounds. Vertiginous seizures may also be evoked from the temporal convolutions because of their relationship to vestibular functions.

6. The lower part of the precentral gyrus gives rise to attacks in which chewing, swallowing and sometimes vocalization occur, and involvement of nearby post central gyrus may produce salivation.

7. The buried cortex of the Sylvian fissure and the insula gives rise to sensorimotor seizures referred to the alimentary tract, according to Penfield and Rasmussen.¹

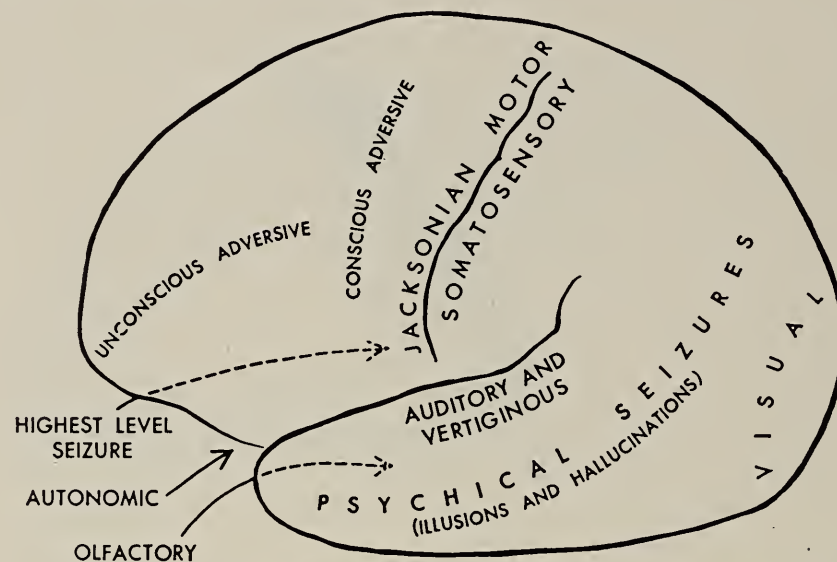


Fig. 2. The areas concerned with various types of seizures. Highest level seizure is presumed to arise in the diencephalon. Autonomic seizures also rise in the basal diencephalon. (From Penfield and Rasmussen, 1950.)

such a case the so-called aura gives the clue to the point of origin of the discharge.

3. The so-called extrapyramidal motor areas (especially areas 6 and 8). These produce rather complex movements when stimulated, and irritative lesions here often produce the so-called adverse type of motor seizures in which there may be turning of the eyes, head and trunk toward the side opposite the lesion. Such seizures may spread rapidly, even to the opposite side and generalized tonic-clonic convulsions occur. Unconsciousness appears early. From this region of the cortex there are plentiful pathways for spread to deeper regions. Here the adverse movement is the factor which localizes the site of the original discharge and, according to Penfield,¹ distinguishes the fit from the idiopathic type.

4. The association area of the occipital lobe—area 19 of the visual association region. Adverse movements may also occur in seizures originating in this region, but this type of discharge is accompanied by a visual aura which distinguishes it from the frontal type.

5. The visual area (17) and auditory area (22).

8. Elaborative areas (speech, etc.). When these areas are involved in epileptic processes there may be vocalization in the form of cries and even movements of the mouth and jaws, but there is an arrest or suppression of speech itself. Thus aphasia, not speech results. Similar suppressions affecting other processes also occur with involvement of other elaborative areas in the parietal and frontal lobes.

The above will suffice to furnish some indication of our knowledge regarding cortical localization in epilepsy. Perhaps one of the most important functional generalizations to be drawn from the above examples, as Penfield¹ points out, is that epileptic discharge of the above types is not capable of producing skilled and purposeful acts, such as speech, dancing and singing and therefore must not be able to activate "acquired" neuronal circuits of pattern or non-pattern type.

THE TEMPORAL LOBE AND PSYCHICAL SEIZURES

We have just indicated the cortical areas from which five of the six previously listed types of focal epilepsy may arise. The evidence which may be adduced for these localizations includes that

derived from stimulation of cortex in animals and conscious man and correlation with the observed peripheral initial site of seizure, and the cure or alleviation of the fits when the offending region has been removed. The sixth type of seizure supplies data of great importance for basic neurology. This is the "psychical" seizure recently discussed by Penfield and others.

Epileptic discharges of temporal lobe origin, often with some involvement of nearby parietal lobe, may cause psychical rather than pure sensory seizures, and when they are described by patients, seem to be based upon the individual's memories. There is good evidence that recurring seizures in-

well as the memory mechanisms of the opposite hemisphere and the psychic phenomena are then obliterated and retrograde amnesia results.

These findings are of great importance for knowledge of cerebral function. The temporal lobe becomes a very important structure indeed, since in it we appear to develop the neural patterns upon which conscious memory depends. This concept also helps to explain the frequency with which aphasia results from destructive lesions of the temporal lobe in the dominant hemisphere—here there is obliteration of at least some portions of the mechanisms for memory of symbolic expressions (Figure 2).

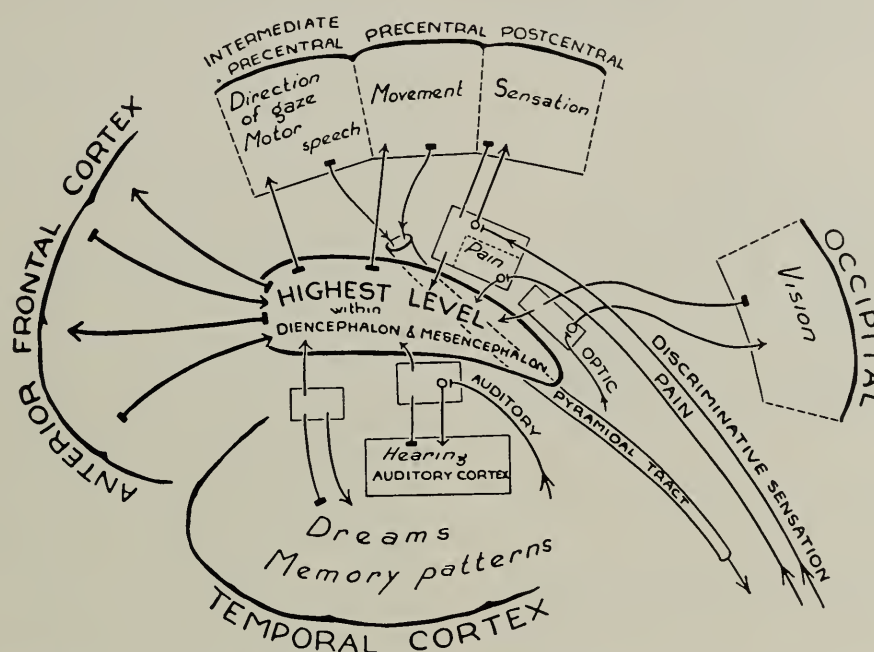


Fig. 3. Hypothetical diagram to illustrate the functional relationships between various cortical areas and the "highest level." (From Penfield, 1947.)

volving this region may produce a sort of conditioning here. Thus, after seizures have produced hallucinations, electrical stimulation of the temporal cortex (at operation) may also evoke that or a similar dream. Often these dreamy states are related to and seem to be formed by the patient's past experiences. It seems, then, that the temporal lobe contains neural patterns which have been acquired, since they are based upon personal experience and memories and since they are peculiar to the individual. An epileptic focus in this region may then set off a discharge involving neuronal mechanisms of complex, pattern type which are of a highly personal and individual nature so far as the patient is concerned.

Certain types of epileptic discharges in the temporal area may also produce alterations of perception. In these the patient's situation seems to him to be altered, but he is nevertheless aware of actuality and thus possesses at the time a sort of double consciousness. With increasing severity of such psychical attacks there may be spread to involve communication paths to deeper areas as

AREAS CONCERNED WITH AUTONOMIC EPILEPSY

While autonomic phenomena such as salivation may appear in some types of focal epilepsy, and while such phenomena may be produced by stimulation of certain cortical areas, the most dramatic of such seizures have been said to be produced by pathologic irritation of the walls of the third ventricle, presumably affecting the basal part of the diencephalon, the hypothalamus. The observable constituents of these attacks include peripheral vasodilatation, rise in blood pressure, lacrimation, salivation, mydriasis, cardiac acceleration and changes in respiration. Similar responses may be obtained by stimulation of the hypothalamus, but recent work indicates that some of them at least may also be obtained by stimulation of orbitofrontal and limbic cortex.

IDIOPATHIC EPILEPSIES

While the data of greatest practical significance have accrued from focal seizures, the accumulation of experience from laboratory and clinic also opens

routes which may eventually lead to understanding of seizures of more obscure origin.

The petit mal type of seizure is characterized chiefly by loss of consciousness without significant muscular involvement. It is a modern concept that the so-called grand mal attack is simply an extension and intensification of the petit mal type so that a generalized convulsion is superimposed upon the latter. Loss of consciousness is the striking phenomenon and the reasons for it have puzzled physiologists for many years. It will be recalled that a seizure starting in a cortical focal point, say the

been removed. Penfield therefore postulated that the "highest level" lies in the diencephalon and mesencephalon (Figure 3). Here, then, would reside the mechanisms responsible for consciousness and probably also those which regulate the cortical integration of sensorimotor experiences so as to set up psychical memory patterns. There is a wealth of clinical and experimental evidence that lesions involving the diencephalon and upper mid-brain produce unconsciousness or abnormal sleep and even progressive amentia. It seems reasonable, then, that the spread of a focal seizure to involve this region would have a similar effect. Applying the reverse argument, a seizure originating in the diencephalon could produce a sensory aura by spread to a cortical projection area, could produce unconsciousness by the extent of its own involvement, and generalized convulsions by simultaneous spread to the motor areas of both hemispheres. Spread of this sort would be anatomically simple in view of the extensive diencephalo-cortical fiber connection systems.

Experimental evidence for this concept has been produced by Jasper⁹ and his co-workers. It is well known that during the lapses of consciousness which mark petit mal seizures there is a generalized bilateral change in activity of the cerebral cortex as evidenced by electroencephalographic records. The usual record of electrical potential changes, dominated by rhythmic waves of 8-to-12-per-second or faster frequencies, is altered so that large 3-per-second waves appear, which characteristically alternate with "spikes," or pointed waves of short duration and less voltage. Jasper⁹ et al. have been able to produce this type of generalized cortical electrographic pattern in cats by 3-per-second stimulation of the thalamus in the region of the massa intermedia, or more precisely, in the region of the intralaminar nuclei. Furthermore, Hunter and Jasper¹⁴ have produced a sort of "arrest" of activity resembling petit mal in conscious cats by stimulation of this area (including perhaps the anterior thalamic nuclei). Intensification of such stimulation has produced generalized grand mal convulsions. The anatomical connections involved in these diencephalo-cortical influences are not completely worked out, but there is evidence that beside the specific thalamo-cortical projection systems which are connected to restricted cortical areas, a diffuse projection system or systems exists. This originates directly in the reticular nucleus¹⁵ and through indirect connection probably from the intralaminar region.⁹ There are also rich connections between the dorsomedial thalamic nuclei and the anterior frontal regions.

Concepts of thalamic influence on rhythmic cortical electrical activity began with the work of Dempsey and Morrison,¹⁶ who showed that stimulation of the thalamus could "recruit" cortical waves of the same frequency as the applied stimuli. This work has since been extended and confirmed by others. Records of brain waves have recently

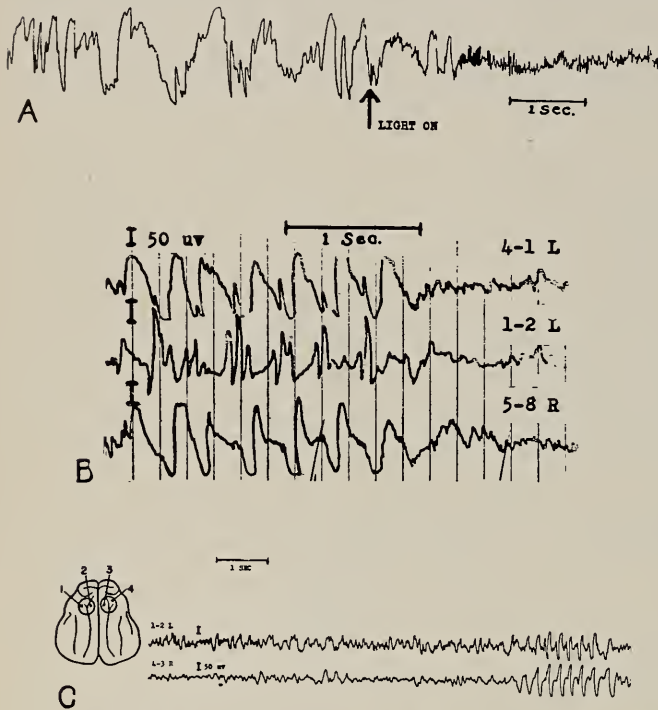


Fig. 4. A. Electroencephalogram of a cat, showing change from sleep to waking—the arousal or alerting pattern, characterized by change from random slow waves to higher frequency waves of lower voltage.

B. A burst of 3-per-second spike and wave pattern characteristic of petit mal seizures, recorded from a cat after extensive lesions had been placed in the basal diencephalon.

C. Electroencephalogram of a cat with diencephalic lesions, showing a paroxysmal wave pattern.

sensorimotor area, may come and go without change in the patient's consciousness. On the other hand, after the onset of an overt seizure, extension may occur, with increasing peripheral involvement and finally loss of consciousness. What is involved in the spread which causes this? Penfield and his group have attempted to answer this by a new elaboration of Hughlings Jackson's concept of the "highest level" of functional differentiation in the nervous system. Jackson thought that this level, which would be in part concerned with consciousness, might be in the frontal lobes, and it is true, according to Penfield, that seizures beginning in the anterior portions of these lobes quickly bring unconsciousness. However, it is well known that removal of these areas does not produce unconsciousness in man, and in animals there are periods of some type of apparent consciousness alternating with sleep after nearly all the cerebral cortex has

been recorded from the human thalamus by Spiegel and Wycis,¹⁷ who have found that abnormal slow waves and spikes appeared first in the thalamus and later in the cortex in cases of petit mal and grand mal. Hayne et al.,¹⁸ however, were not able to record such phenomena from the human thalamus. Spiegel and Wycis furthermore found that small surgically produced lesions in the medial part of the thalamus greatly reduced the frequency of epileptic attacks in two patients and rendered them more responsive to anti-convulsant medication.

While much investigative work must still be done, especially in man, there is increasing evidence that cortical functions are greatly dependent on subcortical relationships. As indicated above, the thalamus may have much to do with regulating cortical electrical rhythms. The hypothalamus and portions of the reticular formation of the brain stem are concerned with promoting cortical patterns of activity (Figure 4) which are characteristic of wakefulness and attentiveness.*^{19,20} Electrical potential patterns of proxysmal type have been recorded from the cortex in animals in the acute stage following production of extensive experimental lesions in the basal diencephalon (Figure 4, B, C). Severe and often fatal convulsions have sometimes been observed in such animals. It is not known whether the electrographic changes are due to acute irritation or to disorganization of subcortical-cortical patterns. It is not going too far then to presume that when cortical-subcortical relationships are altered in any of many ways by some direct pathological or indirect pathological-physiological process the rhythms of neuronal discharge may be so disturbed that seizures result, and if the diencephalic mechanisms are disturbed beyond a certain point, changes in consciousness result.

Disturbances of these interaction mechanisms may also account for the "automatisms" which often appear in so-called "psychomotor" seizures. Thus in automatisms of temporal origin there are psychical illusions which are interrupted by spread to the diencephalon with loss of awareness but without loss of motor control of the body. A peculiar 6-per-second cortical rhythm is characteristic of this state. Petit mal is an automatism of subcortical origin. Automatisms may also occur during epileptic discharges originating from the anterior, medial and orbital portions of the frontal lobe. In these cases Penfield believes the diencephalic "highest level" is inactivated without paralyzing the sensorimotor integrating system, which includes receptor and effector mechanisms but none for memory-recording. The latter and concomitant

processes of understanding and decision depend upon cortico-diencephalic cooperation. Penfield¹ proposes that "psychomotor" seizures are then in reality "psychoparetic." It is of interest to note that Hunter²¹ has produced seizures with what appears to be automatism in cats by stimulation of the anterior thalamic nucleus, and electrographic patterns of paroxysmal type appeared in the part of the cortex corresponding to the temporal lobe of man.

It may be permissible, then, to propose that when automatisms, including petit mal seizures, occur,

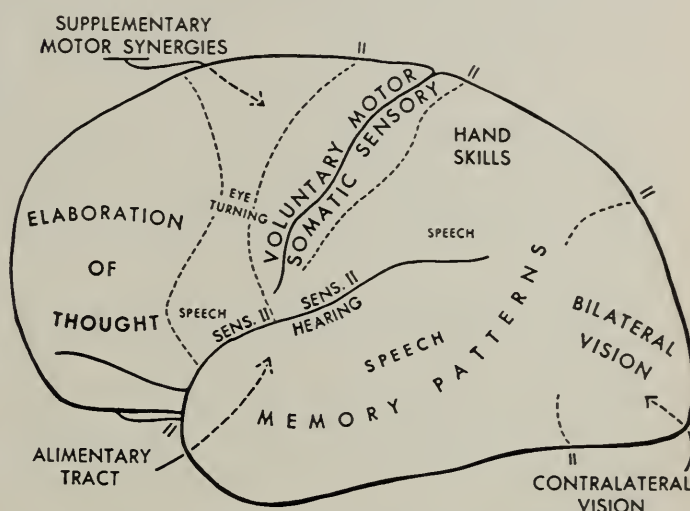


Fig. 5. Diagram summarizing the major functional regions of the human cerebral cortex. (From Penfield and Rasmussen.)

the subcortical mechanisms which regulate cortical physiological activity are so disturbed that they cause the production of stereotyped highly synchronous rhythmic discharges from the cortex (the wave-and-spike or six-per-second rhythms). There must be an inactivating phase of this discharge which obliterates memory circuits and even consciousness. Perhaps this inactivation is due to excessive synchronization and intensification of neuronal discharges. If concomitant or overlapping convulsions occur they are due to involvement and discharge of sensorimotor mechanisms.

SPREAD OF SEIZURES

In conclusion, a word as to the means by which seizure discharges may be propagated or disseminated. (1) The possibility exists that the intense neuronal discharges at the focus may be so abnormal as to excite neighboring cells without recourse to neuronal pathways. (2) A slow (10-30 mm. per second) spread may take place through the cortical feltwork of fibers. This would activate closely adjacent neurons. (3) Spread for greater distances takes place through fiber connections in the white matter immediately subjacent to the cortex. These continue in activity after deep undercutting of the white matter (McCulloch). (4) Spread by projection along paths to or from the subcortical nuclei. These are usually high energy discharges producing widespread effects. McCul-

* It has recently been established that there are mechanisms located in the reticular formation of the brain stem and hypothalamus which are capable of facilitating and thus increasing many reflex motor responses and also cortically induced movement. These areas are also concerned with the cortical alerting or activating mechanisms mentioned. It is suggested that they may well participate in the intensification of epileptic discharges and may even, under abnormal conditions, be capable of producing abnormal facilitation which could "fire off" an epileptic seizure.

loch believes that epileptic excitation in subcortical structures may persist for some time and by spread over projection fibers can produce seizure discharges in one or many cortical areas.

CONCLUSION

The writer hopes that the reader who has been patient enough to read thus far, and also, he who was wise enough to look first at the Conclusion, will now turn to the beginning and read again the best possible summary which could be given to this review, in the words of writers whose authority in the field is beyond question.

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HOTEL ROOMS AT SIOUX CITY

If you do not yet have a hotel reservation for the Sioux City meeting, we suggest you write the Chamber of Commerce. It will turn all requests over to a Housing Committee of the Woodbury County Medical Society and rooms will be assigned by that committee.

ELECTROENCEPHALOGRAPHY IN THE EVALUATION OF EPILEPSY

SOME APPLICATIONS AND LIMITING CONDITIONS

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HUMAN ELECTROENCEPHALOGRAPHY (EEG) is now 21 years old, and while its recording is far simpler than in 1929—or even in 1935, when work started in America—its basic origin and neurophysiologic determinants remain more or less obscure. Fortunately for the clinician, such academic ramifications do not prevent application of the electroencephalographic technic to a variety of problems. However, because of these fundamental limiting factors, EEG remains at present almost wholly empirical at the clinical level.

The essential purpose of the present paper is to discuss, as succinctly as possible, some of the problems existing in the electroencephalographic evaluation of epilepsy, in order that general practitioners may understand them and use the EEG technic to better advantage in the handling of patients with convulsive disorders.

First, what is an electroencephalogram? Briefly, the EEG is a graph of change in voltage with reference to time, the voltage changes being referable to the cerebral cortex. Second, how are cortical voltage changes measured? Except in the operating room, of course, the measurements are not direct. Although EEG voltages are small (and are measured in millionths of a volt— μv), they are sufficient to be recorded at the scalp if proper amplifiers are used. It is thus possible to record changing voltage differences between electrodes placed on the head. The electrodes (usually moist pads, or silver discs held against the scalp) connect to high-gain amplifiers which drive a magnetic pen, writing on moving paper. The result is a "wavy line"—the EEG (Figure 1). As many as eight EEGs from different cortical areas (or, more properly, scalp points) may be simultaneously recorded by multiple amplifier-pen systems.

The general as well as the particular characteristics of the EEG will depend on the position of the electrodes on the head. Two methods may be used. One, widely employed, uses a "reference" electrode on the ear; the other electrodes are on the scalp, so that the differences of potential are between scalp and ear. This is called "monopolar" recording. The other method, also widely used, records voltage differences between adjacent scalp electrodes ("bipolar" recording). The first method has the disadvantage of recording in *all* EEGs any voltage changes introduced at the ear—and the ear is close to the inferior surface of the temporal lobe, which in some cases may be discharging pathologically.



FIGURE 1. (Upper record.) Simultaneous EEGs as follows: Track 1, left occipital (± 1) to paralleled ears (monopolar); Track 2, right occipital (± 2) to paralleled ears (monopolar); Track 3, left motor (± 5) to paralleled ears (monopolar); Track 4, right motor (± 6) to ears (monopolar); Track 5, Fourier transform (Walter analyzer) of 10 secs. of Track 1 directly above. Pips represent frequency (per sec.) as indicated, height of pips being proportional to total voltage at indicated frequency during epoch. Track 6, left occipital to left motor (± 1 - ± 5) (bipolar); Track 7, right occipital to right motor (± 2 - ± 6) (bipolar). (Lower record.) Same as upper, but automatic analysis is of Track 5, bipolar occipital-motor run. A different transform is obtained, showing more 6-7/s wider range of alpha frequencies, less 14-15/s. and more 20-24/sec. activity; this illustrates the contention that electrode placement and system of electrode combination affect the final result.

"Bipolar" recording, on the other hand, permits precise localization of such discharge, since no one electrode is common to all of the recording systems.

Figure 2 shows the present system of placements

used in this laboratory. Both "mono-" and "bipolar" recording is employed. The legends at the left make clear the exact set-up used routinely. The important point to be appreciated is that the final interpretation of an EEG depends much on the

number of electrodes, their placement and the combinations in which they are used for recording. A 3-lead or a 6-lead EEG will be less informative than an 8- or 12- or 14-lead EEG, and monopolar recording should be supplemented with bipolar recording for fullest interpretation.

To return to the EEG itself, if it is to be evaluated in the clinical situation, we must know: (1) its normal ranges and (2) its abnormal correlates. The "normal range" of a particular EEG depends, among other things, on chronological age, on possible ingestion of drugs, on metabolic factors and on level

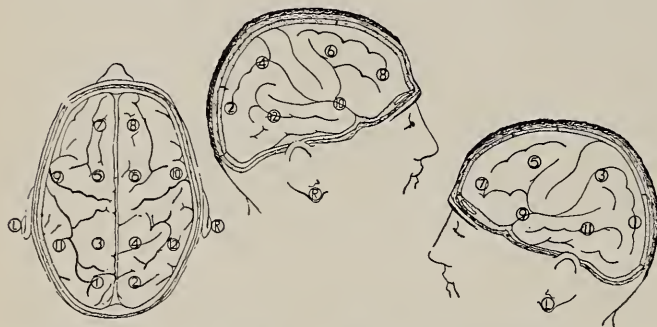


FIGURE 2. Schema of scalp electrode positions projected on brain surface.

"Monopolar" combinations are:

1-e	1-e
2-e	2-e
5-e	11-e
6-e	12-e
7-e	3-e
8-e	4-e
9-e	9-e
10-e	10-e

Other reference leads may be used. A common one is to a vertex electrode (not shown) so that L (e) and R (e) may be separately evaluated.

"Bipolar" combinations are:

1-3	1-11	L-9
3-5	11-9	9-5
5-7	9-7	5-6
7-9	7-8	6-10
2-4	8-10	10-R
4-6	10-12	11-3
6-8	12-2	3-4
8-10	2-1	4-12

of consciousness ("alert," "relaxed," "asleep"), to mention a few of the more obvious. It also depends on the area of the cortex recorded and on relations between areas of the cortex. To return to Figure 1, the parameters may be defined as follows: Age, 21; no drugs; presumably normal metabolic factors; subject awake, relaxed, eyes closed.

This sample of EEG is characterized, superficially, by the presence of 9 to 10 per sec. activity, of varying voltage between 5-30 μ V); and by some faster, 20-24 per sec. activity of varying voltage (1-5 μ V). This is a "classically normal" adult record. The eye does not readily detect the presence of other frequencies, but if the EEG is simultaneously analyzed into its fractions, by means of an electrical wave analyzer, the presence of activity over a range from 1½-30 per sec. (arbitrary limits of the instrument) is at once established. Figure 1 includes (line 5) the automatic analysis of the EEG trace as determined with the Walter low frequency wave analyzer. The 10 per sec. activity has merely masked much of the other, which is of quite low voltage. Actually, there is more or less activity at all frequencies from 1½-30 per sec., the analyzer's range.

The record of other "normal" adults would not

of necessity look like this one. A good deal of variability is permissible in the "eyes closed, awake" condition. The record may even be arrhythmic, without organized frequencies. But shifts below or above certain frequency limits (8 and 13 per sec.) of *dominant* rhythmic activity are, *a priori*, not "normal" in the EEG sense. Normality is, hence, defined by the dimensions of frequency and amplitude of the EEG's many components.

In children the picture is somewhat different.^{1, 2, 3} The normal newborn infant shows little organized rhythmic activity when awake, and not until the third or fourth month does such activity develop. At that time the average dominant occipital frequency is 3 per sec. From then until 18 or 20 years there are more or less continuous changes in the frequency spectrum, although the dominant occipital *alpha* stabilizes at about 16 years. The variability from age to age, especially at the younger years, is so great that considerable experience may be required in interpreting EEGs of children, unless the abnormalities sought after are particularly outstanding.

Regardless of age or other parameters, bilateral matching of electrical activity is regarded as important in the definition of a "normal" EEG. (Exception exists only in the case of the temporal leads, where amplitude may normally vary to a considerable extent, awake; and where even frequency may vary asleep; and in the case of the occipital leads, where 10 per sec. *alpha* amplitude may be asymmetrical within certain limits.)

To the physician, the clinical correlates of the EEG are of greater immediate concern than normal variability, although "abnormality" can only be defined after "normality" has been established. The diseases in which the EEG might be expected to show some deviation from "normal" are virtually too numerous to list in this brief presentation. Fortunately, we are here assigned the slightly simpler task of evaluating only deviations in convulsive disorders.

The most prominent claim to clinical usefulness of the EEG has, from the outset, been in the evaluation of epilepsy and allied disorders. The original American disclosures of Gibbs, Davis and Lennox⁴ opened the door to a vast series of more and more refined observations of EEGs in the epilepsies. Stripped of historical detail, these descriptive studies reported: (1) that there are abrupt, paroxysmal EEG changes *during* (and often just preceding) a clinical attack; (2) that these may be characteristic for the type of attack (i.e., petit mal, grand mal, psychomotor) and (3) that the inter-seizure EEG of the epileptic patient may deviate from normal (as we have roughly defined it above).

From a practical, diagnostic point of view, findings (2) and (3) are the most important, for if the only time abnormality appeared was during an attack, the clinical observation alone would usually suffice. However, these are "validating experiments" in that they permit description of EEG

characteristics during the development of different clinical states.

Figure 3 A shows the classical EEG picture during an attack of the *petit mal* type; this is a 3 per sec. wave and spike, which repeats over and over until the attack ends. Figure 3 B shows the EEG characteristics of the type empirically related to the *psychomotor attack*. Figure 3 C presents the EEG at the onset of a *grand mal* attack. These, as chosen, are obviously different and appear to be quite characteristic of the three clinical entities.

When patients are recorded during seizure-free intervals, as they usually are, it would appear that, if there were paroxysmal EEG activity of any one of these types, then the electroencephalographer could offer up to the clinician an accurate diagnosis. Unfortunately, while paroxysmal activity often appears in interseizure EEGs, it does not universally do so; and when it does appear, there may be a failure of exact correlations with the seizure type characteristic for the particular patient.

Jasper and Kershman⁵ and Gibbs, Gibbs and Lennox⁶ have provided a substantial body of evidence in support of the contention that only in a limited number of cases, with particular types of epilepsy, can the interseizure EEG serve as an accurate diagnostic indicator. Jasper and Kershman state: "Characteristic electroencephalographic patterns have been found in carefully selected patients who had only minor attacks of the type described as *petit mal* or *psychomotor*." But . . . "these same electrographic patterns were . . . often found in

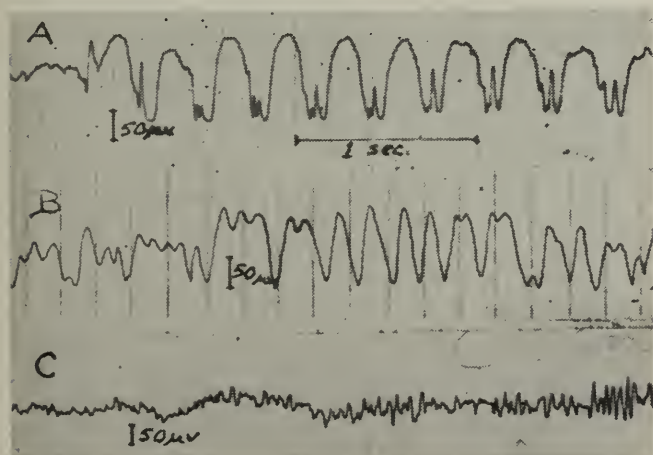


FIGURE 3. "Classical" paroxysmal seizure discharges: A: 3 per sec. wave and spike seen in *petit mal* attacks. B: 6 per sec. and "square-topped" waves (these latter actually temporal spikes fed into the reference ear leads, in many cases) of *psychomotor attacks*. C: Paroxysmal very fast activity just preceding a *grand mal* seizure (which started at end of strip shown). All records from left motor (±5) to ears (L + R, paralleled).

clinically unselected patients subject to major convulsive seizures and who did not show prominent *petit mal* and *psychomotor* seizures." (Dr. Edward C. Clark and I have also found this to be true, in an unpublished study of specificity of the wave and spike for *petit mal* epilepsy.)

Gibbs, Gibbs and Lennox⁶ have presented their data somewhat differently, and hold another opin-

ion with respect to the diagnostic significance of the wave and spike pattern. They feel that paroxysmal wave and spike activity in the interseizure EEG correlates well indeed with the clinical diagnosis of *petit mal* epilepsy. In 93 cases of pure *petit mal* 84.8 per cent exhibited paroxysmal wave and spike activity. Where *petit mal* and *grand mal* were both present in the clinical diagnosis, 71.2 per cent

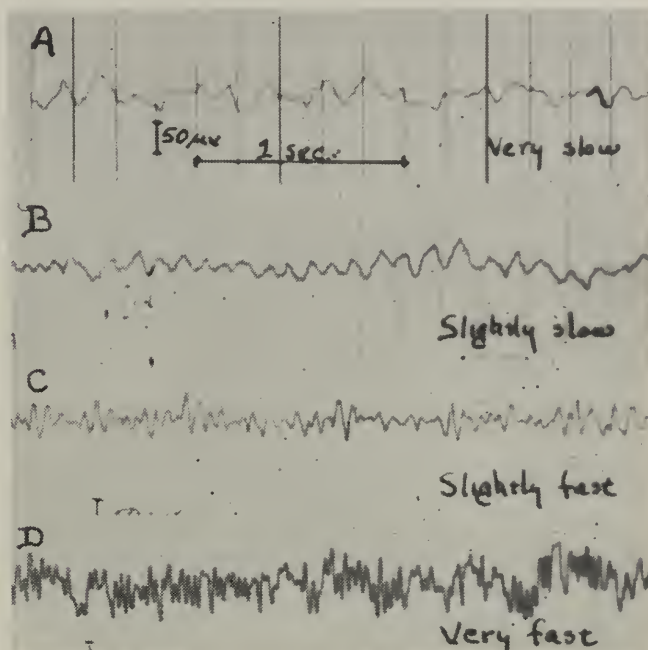


FIGURE 4. Four types of "non-specific" adult abnormality. A. Very Slow (Gibbs' "S-2"). B. Slightly Slow (Gibbs' "S-1"). C. Slightly Fast (Gibbs' "F-1"). D. Very Fast (Gibbs' "F-2").

of 181 patients showed the wave and spike—but only 4.4 per cent of these showed an EEG supposedly characteristic of *grand mal*. Thus, an EEG diagnosis would have been incomplete on these patients. When all three subtypes were present, according to clinical diagnosis, 31.6 per cent of 19 patients had wave and spike patterns. In the total group (293 cases) in which *petit mal* comprised or was part of the clinical diagnosis, 214, or 73 per cent, had wave and spike patterns. They feel that in many instances in which wave and spike activity appears, *petit mal* may not have been clinically diagnosed for a variety of reasons, but that it could be after more careful inquiry. The same authors also point out that the clinical use of the term may vary in some places (i.e., to include any short attack) and thus lower correlations.

In their own data, only 1.9 per cent of 711 patients with a diagnosis of *grand mal* epilepsy presented paroxysmal fast interseizure activity. In 95 cases with *psychomotor* epilepsy, 42 per cent showed paroxysmal 6/sec. or temporal spikes. These data limit the absolutely positive diagnostic value of the technic to an appreciable extent.

The failure of EEG to be specifically paroxysmal for a subtype of epilepsy means that there is either intermixture of paroxysmal subtypes, or that the EEG is normal or that it is nonspecifically abnor-

mal. Many of the EEGs taken on epileptics are of this latter category. They are neither normal nor "specifically" (which by now, it is obvious, is a not totally acceptable term) abnormal. Many records are either too slow, more or less continuously, or too fast. Records of these types may be "slightly" or "very" *slow* or *fast*. Figure 4 illustrates these four types. They are fairly common in unselected epileptics. According to Gibbs, Gibbs and Lennox,⁶ 15.6 per cent are "slightly" and 13.1 per cent are

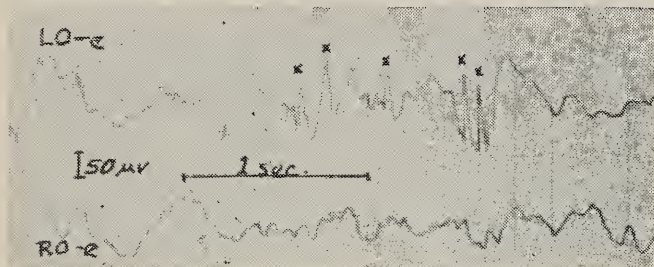


FIGURE 5. Focal spikes in left occipital area; right occipital (and all others, not shown) clear of spiking. Convulsive disorder, visual aura.

"very" slow; and about 16.8 per cent are "slightly" and 8.9 per cent "very" fast. In a control group of 1,000, only 7.6 per cent were "slightly" and 0.7 per cent were "very" slow and 6.2 per cent were "slightly" and 0.4 per cent "very" fast. In the same group, 0.9 per cent showed paroxysmal "seizure" discharges (0.4 per cent, 3 per sec. wave and spike "of petit mal"; 0.5 per cent, 6 per sec., and spikes, "of psychomotor epilepsy"), so that the separation of epileptics from normals, by EEG alone, cannot be positively accomplished. It can only be relatively done.

These data make it necessary to view a particular EEG in terms of the relative incidence of its type in the "normal" and the epileptic samples studied. Thus, "slightly" slow or fast EEGs are about two times as common in epileptics as normals and "very" slow or fast EEGs are about 20 times as common. Paroxysmal seizure patterns are about 33 times as common in unselected epileptics as in normals (29.3 vs. 0.9 per cent).

These probabilities, or "odds," are perfectly good as long as there are considered to be two—and only two—diagnostic possibilities: either "no disease," or "epilepsy, type unspecified." When one reviews the EEG literature, even superficially, one soon finds that slow and fast anomalies have many clinical correlates. Among these are primary behavior disorder, psychopathic personality, post-measles encephalitis, meningo-encephalitis, concussion, etc. Thus, the problem of differential diagnosis by EEG alone may sometimes present some real limitations to its use as a court of last appeal. Nevertheless it may sometimes provide highly pertinent information of a supplementary or a complementary nature, as in cases where epilepsy is only suspected and where the history is indefinite or vague. Here, a paroxysmal or a "very" slow or fast EEG has meaning in relation to the clinical possibilities pre-

senting themselves. Other uses are in follow-up of therapeutic effort, where diagnosis is not the issue. There are also symptom complexes not suspected of being epileptic which, by EEG, have been found to be related to epilepsy.^{7, 8} Relief of symptoms may follow anticonvulsive therapy.

So far we have not discussed the electroencephalographer's apparent nightmare of a "normal" EEG in a known epileptic patient. In 1946 Dr. John Abbott, of Boston, made an appreciable inroad on this problem.^{9, 10} He found that 21 per cent of 193 patients with an unequivocal diagnosis of epilepsy had normal EEGs. (This compares with the Gibbs, Gibbs and Lennox value of 15.3 per cent—7.5 per cent for petit mal, 18.0 per cent for grand mal and 14.7 per cent for psychomotor). Abbott found that seizures were less frequent in patients with normal EEGs, that less medication was required in their control, that there was not as great an incidence of epilepsy in their family histories and that they had better educational and occupational records. Thus, while the finding of a normal EEG in a suspected epileptic may never be construed, alone, to indicate that the patient does not have epilepsy, it may be useful in combination with other data to suggest a possibly more favorable prognosis. Dr. Margaret Lennox¹¹ has recently found that a normal EEG in febrile convulsive disorders may have a more favorable prognostic interpretation than an abnormal one.

Focal abnormalities are another category well-deserving of discussion here. Focal abnormalities may be of several kinds: spikes, "sharp" waves and random slow (or "delta") waves. The former two types are often found to arise in or near an epileptogenic focus. (Figure 5.) In selected cases, the region of spike discharge will usually be found to be the region of a cicatrix or other epileptic trigger mechanism.

Gibbs, Wegner and Gibbs¹² have compared post-traumatic epileptics with normal controls, head injuries and unselected epileptics. The relative incidence of focal abnormality was as follows:

Normal controls	0.0 per cent
Post-traumatic epileptics ..	51.0 per cent
Unselected epileptics	14.0 per cent
Head injury	
Mild	2.0 per cent
Severe	19.0 per cent

In studying selected epileptics, the incidence of local abnormality may thus be fairly high. The chief problem is not in finding local abnormality, but in evaluating it. Jasper¹³ has expressed the opinion that the only activity of a local epileptogenic lesion to be regarded as characteristic is the random spike. However, Pacella, Kopeloff and Kopeloff¹⁴ and Cure and Rasmussen¹⁵ have found that the site of spike discharge and the site of an experimental epileptogenic lesion are not of necessity correlated; bilateral abnormality after unilateral lesion may result; and right hemisphere

spiking may follow left hemisphere lesion. In the human, Meyers, Knott, Hayne and Sweeney¹⁶ have found that there is demonstrable "wandering" of spike foci among several levels of cerebral nuclei, and that difficulty might be met in establishing which site was primary, on electrical grounds alone.

Evaluation of other local phenomena than spikes should be perhaps even more cautiously stated. Repeated examinations on the same patient—especially in pediatric practice—often reveal either the disappearance or the extensive shifting of foci, especially those of slow activity. Even paroxysmal "seizure" pattern foci may not reveal a true cortical firing zone, but rather a cortical zone fired into by subcortical centers.

The chief value of the EEG in evaluating foci is in suggesting the possibility of focal cortical firing, where none was suspected and in localizing relatively precisely when the existence of a focal lesion is suspected on clinical grounds. It is better, in other words, for the EEG report to suggest neurosurgical consultation than to make any categorical statement of focal pathology which may be disturbing to the patient, the parents and relatives, and sometimes to the referring physician—and then be found to be wholly erroneous.

In attempting to summarize, one usually sharpens the salient features of a foregoing discussion. If there is any salient feature in this brief discussion of the EEG in the study of epilepsy, it is this: the EEG may do wonders, but it certainly will not do everything. While some clinicians may desire to throw their diagnostic problems on the shoulders of the electroencephalographer, most will find the EEG more helpful if they use it as another line of laboratory inquiry which will provide information about a patient—information which must then be coordinated with the other available data to provide a final solution, by the clinician, of the initial problem.

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A BRIEF SURVEY OF THE PHARMACOLOGY OF ANTIEPILEPTIC DRUGS

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INTRODUCTION

SCIENTIFIC INVESTIGATIONS directed toward correlations among previously unrelated areas of research are often not only fruitful for these areas but may lead to the development of new fields of research. This mode of scientific progress may be illustrated by reference to the now deeply rooted fields of biochemistry, physiological-psychology, neuro-psychiatry and so forth. Perhaps somewhat less well recognized but equally illustrative is the great multitude of examples of this scientific growth principle derived through the application of drug research among the various fields of medical specialization. Thus, in the present article, our discussion is developed with particular regard to that class of pharmacological agents known as the antiepileptics. While the main portion of this topic will emphasize the development, evaluation and use of these materials, an equally important aspect of the subject arises through the fact that as our knowledge of what constitutes anticonvulsant activity in a pharmacological sense becomes more adequate, this knowledge brings with it new information on the mechanisms of the seizures themselves. Indeed an understanding of the mechanism of antiepileptic action is tantamount to an understanding of the basic physiology of seizures. It is for this reason that even a brief discussion of this class of drugs would lack orientation without a few remarks concerning the origin and propagation of convulsive activity.

The writings of John Hughlings Jackson are so intimately interwoven into the foundations of the physiology of the convulsive state that they always form a natural and convenient point of egress into a discussion of the pharmacology of the antiepileptic drugs. From the many discoveries of Jackson, his great contributions to the correlation of various sensory aura and limited motor seizures with anatomical lesions may appropriately be recalled.¹ The initial lesion may be of vascular or other origin but Jackson's "occasional, sudden, excessive, rapid and local discharges of grey matter" functionally arise from the neurones. As reviewed by Toman

and Goodman^{2,3,4} the discharging neurones may have become hyperexcitable through ischemia or in other cases through the loss of intrinsic inhibitory systems of neurones by injury. Moruzzi⁵ has outlined evidence supporting the hypothesis that the convulsive activity propagates itself progressively throughout the brain by means of high-frequency bursts so that successive normal areas become involved in the process. At the same time other mechanisms may play a part in which the intrinsic inhibitory mechanisms of normal areas are broken down⁶ with a change of inhibition into excitation⁷ and this latter may be activated subliminally through short neurones.⁸ In any case the ultimate objective result of the excessive cerebral stimulation in various mammals is a tonic-clonic seizure of a stereotyped pattern.

At least four factors contribute strongly to the character of the actual seizures produced and variations in each of these go far toward explaining the variety of clinical seizures actually recognized.

1. The focus or origin of seizure discharges.
2. The degree of ramification of the seizure to other areas.
3. The intensity and character of the distribution of activity of the involved centers.
4. The change in function resulting from secondary hypersynchronization of non-convulsive centers.

SOME ASPECTS OF THE GENERAL PHARMACOLOGY OF THE ANTIEPILEPTIC DRUGS

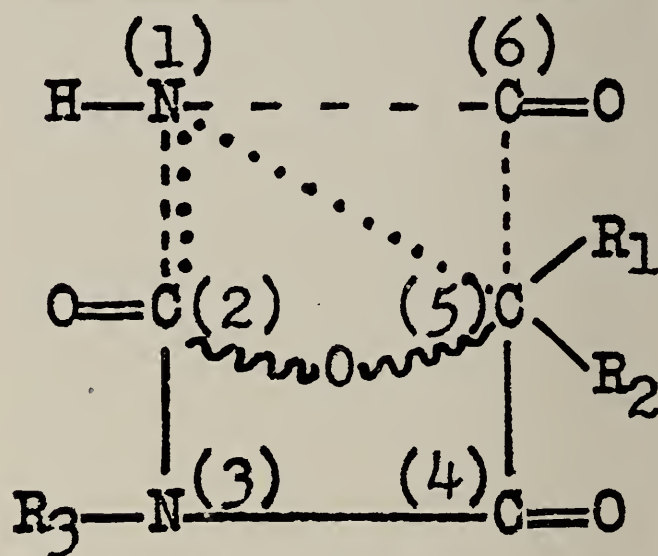
The criteria found particularly useful in the experimental evaluation of potentially useful antiepileptic agents are the following:

1. Determination of normal electro-shock seizure thresholds.
2. Protection of animals against metrazol-induced seizures.
3. Changes in the pattern of maximal electro-shock seizures by the abolition of the tonic extensor component.
4. Inhibition of the lowering of electro-shock thresholds in hydrated animals.

No single experimental criterion suffices to give the information necessary toward the prediction of useful anticonvulsant activity of a given drug prerequisite to clinical trial. At the same time the tests chosen must allow for an appropriate quantitative evaluation through statistical analysis. The above criteria have been found to be particularly effective when used as a battery of tests but no one of them alone will reliably determine anticonvulsive efficacy. By means of such procedures a great many compounds have been screened and the most complete studies concerning the relation between anticonvulsant activity and chemical constitution are those of Putnam and Merritt.^{9, 10} The structures of the clinically valuable agents are strikingly similar as illustrated in Table 1 by the formula and key adopted from Toman.² These agents are shown with

the seizure classes for which they have found their major use.

Name of Drug	Nucleus	Structure			Major Use in:
		R ₁	R ₂	R ₃	
Mesantoin	Hydantoin	C ₆ H ₅	C ₂ H ₅	CH ₃	Grand Mal Psycho-motor
5-thienyl-5-phenyl-hydantoin	Hydantoin	C ₆ H ₅	C ₄ H ₃ S	H	Grand Mal
Diphenyl-hydantoin (Dilantin)	Hydantoin	C ₆ H ₅	C ₆ H ₅	H	Grand Mal Psycho-motor
Phenobarbital (luminal)	Barbiturate	C ₆ H ₅	C ₆ H ₅	H	Grand Mal
Mebarol	Barbiturate	C ₆ H ₅	C ₂ H ₅	CH ₃	Grand Mal
Trimethadione	Oxazolidine-2,4-dione	CH ₃	CH ₃	CH ₃	Petit Mal
Paradione	Oxazolidine-2,4-dione	C ₂ H ₅	CH ₃	CH ₃	Petit Mal
Epidon	Oxazolidine-2,4-dione	C ₆ H ₅	C ₆ H ₅	H	Grand Mal
Phenurone	Acetyl urea	C ₆ H ₅	H	H	Grand Mal Petit Mal Psycho-motor



- a. Solid line bonds link those structures common to all agents.
- b. Dash lines + solid lines: Barbiturate nucleus.
- c. Dotted lines + solid lines: Hydantoin nucleus.
- d. Wavy lines + solid lines: Oxazolidine-2, 4-dione nucleus.
- e. Opening of the hydantoin ring between positions (1) and (5) gives the corresponding acetyl urea.

Clinical studies on all of these agents indicate that they may affect convulsive disorders by varying degrees in the following ways:

1. By reducing the frequency of seizures.
2. By a reduction in the severity of seizures.
3. By decreasing the evocability of seizures.
4. By improvement in the EEG.

Some doctors using these materials in practice tend to rely heavily upon a change toward a more normal EEG as a particularly valuable criterion of antiepileptic activity. That this confidence is unwarranted is indicated by the fact that while trimethadione frequently may produce changes in

the direction of normalcy,¹¹ anticonvulsants such as phenobarbital and diphenylhydantoin sodium in ordinary anticonvulsant doses^{11, 12} cause little or no change in the electroencephalogram unless drowsiness is developed. Finally at least one agent, mesantoin, may exhibit during clinical improvement an increasing abnormality in the electroencephalogram.¹³

Another point worthy of considerable thought is the fact that the various agents detailed in Table 1 as the most useful in clinical practice do not overlap one another with regard to use within the rough categories—grand mal, petit mal, and psychomotor seizures to any great degree. In short, a knowledge of the mechanism of anticonvulsant action must vary in some fundamental way quantitatively or even qualitatively and this illustrates further the contention outlined in the introduction that a knowledge of drug mechanism in a pharmacologic sense may be as fruitful in research upon the basic physiology of epilepsy as the latter is to research on drug action. Indeed the two go hand-in-hand and in the last analysis are inseparable. Drugs are not only useful as therapeutic agents but their actions may serve as guides in the classification and analysis of fundamental biological problems of disease.

THE CLINICAL USEFULNESS OF ANTIEPILEPTICS

While the starting point in the evaluation of an anticonvulsant will be its careful evaluation in regard to the control of convulsive seizures, effectiveness in this regard alone represents no more than a primary step in its final characterization. It is desirable not only to mitigate effectively or annul the manifestations of the convulsive disorder in a given patient but to avoid burdening him with a new set of physical and mental difficulties through various possible side actions of the agent.

Thus in the early use of sodium bromide it may be recalled that the successful control of seizures in a given individual frequently required doses so large that the resultant depressed person was of little more use to himself and society than when left to the ravages of his disease. Verily, the gift of a vegetable-like existence in exchange for a life of convulsions is no great bargain for the patient, however salutary its effect on his family. Even today the problem of isolating the sedative effect from anticonvulsant action is but somewhat reduced and the door for new agents without the sedative liability is well open to further synthetic and pharmacologic investigation.

Sedative activity is by no means the only or even the most dangerous and unpleasant side reaction to the antiepileptic. A general view of the type of side effects exhibited by the more recent useful agents is outlined in Table 2. That one must well regard the therapeutic care of the epileptic as an art requiring great patience and attention to detail coupled with an empirical attitude of mind is well illustrated by the recent study of Gibbs, Everett,

and Richards.¹⁴ Ninety patients with epilepsy of different types were treated successively with phenobarbital, dilantin, mesantoin, tridione and thienylphenyl hydantoin without improvement. They were finally treated with phenurone during which administration 50 per cent were not improved and 50 per cent were either freed of seizures or greatly improved for periods of one to six months. The improvement was mainly noted in those afflicted with psychomotor epilepsy. This latter observation is particularly noteworthy since patients with psychomotor seizures are often resistant to anticonvulsant therapy. The main side effect that they noted and which was observed in 20 per cent of the patients was an exaggeration of pre-existing personality disturbances. The undesirable side effects seemed to be proportional to the power of the drug to control the seizures.

Table 2

Agent	Side Actions
Mesantoin	Drowsiness, dizziness, muscular incoordination, ataxia, gastric discomfort, hyperirritability, restlessness, loss of weight, dermatitis, pancytopenia. ¹⁵
Dilantin	Hyperplastic gingivitis, dermatitis, dry skin, itching, rash, purpura, ataxia, vertigo, blurred vision, nystagmus, tremors, dysphagia, insomnia or somnolence, irritable temper and sometimes mental confusion and hallucinations. Its strongly alkaline reaction may produce gastric irritation. ¹⁶
Trimethadione	Mistiness of vision on going into bright light, painful eyeballs, hemeralopia, skin rash, gastric irritation, aplastic anemia and fatal granulocytopenia. ¹⁶
Phenurone	Exaggeration of preexisting personality disturbances, weakness, anorexia, insomnia, jaundice and urinary disorders, rash. ¹⁷
Meboral	Drowsiness, dry mouth, weakness of limbs, and ataxia. ¹⁸
5-Diphenylene hydantoin	Ataxia, nystagmus, diplopia and dysarthria without drowsiness, rash, fever, malaise, nausea, vomiting. ¹⁹
Paradione	Similar to trimethadione except for the less frequent occurrence of hemeralopia with paradione. ⁴
5-Phenyl-5-thienyl-hydantoin	Similar to diphenyl hydantoin except that it may be successfully substituted for diphenyl hydantoin when gingival hyperplasia limits the tolerated dose of the latter. ⁴

Attempts to discover more and more agents of possible usefulness in cases that are refractory to the materials outlined in this section goes steadily on. Even the antihistaminics have been tried in these regards and while there is as yet no claim that these materials have a place in treatment the article by Churchill and Gammon²⁰ illustrates the manifold variety of research programs underway in this field. They have given benadryl intravenously in doses of 25-125 mgm. to 13 patients with petit mal. Continuous EEG records were made on seven and in the others spike-wave bursts were induced by hyperventilation. The electroencephalograms in ten of the patients exhibited a definite reduction of spike-wave activity where both frequency and

length of the bursts were decreased. In direct contrast to the action of the agent in petit mal, benadryl effected an increase in the amplitude and frequency of spikes in two cases of focal discharge. When pyribenzamine, 8-75 mgms. was administered intravenously to seven patients with petit mal, five of these exhibited a definite increase in the abnormality observed, with the development of a grand mal seizure in one of the patients. This is in distinct contrast to the action of benadryl. Finally, in one patient a Jacksonian seizure was precipitated.

Thus benadryl diminished the abnormal EEG activity in petit mal but increased it in focal cases whereas pyribenzamine, an agent of the same pharmacologic class, increased the abnormality in both petit mal and focal cases. What curious chemical constitutional relationships allow for these surprising differences in activity?

One might easily become discouraged with regard to the care of the epileptic patient if it were not for the truly amazing pharmacodynamic relationships which are being discovered in other fields and the concomitant increase in our knowledge of both the mechanism of drug action and the mode of development and propagation of the disease process itself. Again and again there is observed in the first ranks of this never ending struggle for control over our *milieu enterieur* the ever increasingly fruitful field of the correlation of chemical constitution and pharmacologic activity, a field which already has accomplished much in directing our efforts toward the development of more and more suitable drugs for both specific and symptomatic therapies.

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NEUROSURGICAL MEASURES IN THE MANAGEMENT OF "EPILEPSY"

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NEUROSURGICAL MEASURES applicable to the care of the convulsive patient are of two sorts: diagnostic and therapeutic. Didactic discussion traditionally deals with diagnostic and therapeutic measures under separate headings. It is well to remember, however, that in actual practice the two are inseparable, for while it is a well recognized axiom that effective treatment depends upon proper diagnosis, it is a reality of experience that diagnosis must often wait upon one or several trials of therapy.

I. DIAGNOSIS

To discuss the diagnosis of epilepsy at all presupposes the existence of a competent, generally-endorsed definition of the term by means of which problems in differential diagnosis may be resolved. Unfortunately, no such definition is available. One finds instead several rival formulations, each based upon the orientations, premises and unvoiced prejudices of its advocates. To be sure, "the falling sickness" is no longer seriously identified with demon-possession, visitations from God, recurrent leave-taking of soul from body and retribution for sin. Modern medicine nevertheless continues to entertain a number of obfuscating doctrines bearing upon convulsive disorders, the lamentable consequence of which is that communication among clinicians frequently breaks down, confusion takes the place of profitable discussion, and ill-founded, even frankly detrimental, treatment is instituted.

Many, perhaps the majority of clinicians, tacitly assume the existence of two "kinds" of epilepsy—*primary* ("idiopathic," "essential," "cryptogenic," "real," "true") and *secondary* ("symptomatic"). The distinction between the two appears to reside in "causative" considerations, i.e., in matters of etiology and/or pathology. Primary epilepsy is asserted to constitute a clinical entity *sui generis*¹ and on this basis is differentiated from secondary epilepsy, the ear-mark of which is that it is *symptomatic* of or *caused* by an underlying disturbance, e.g., brain tumor, plumbism, Adams-Stokes' heart block, endocrinopathy and metabolic disorders. It is of more than passing interest that on this view the seizures of primary epilepsy are conceived to be somehow more "real" or "true" than those of secondary epilepsy. The criteria by which this notion receives support have never been clearly stated.

Despite palpable deficiencies, this concept ap-

pears to be firmly entrenched in current clinical practice, a circumstance amply documented in the frequency with which "idiopathic epilepsy" is entered as a sole working diagnosis and made the basis of treatment.

A somewhat related concept looks upon primary epilepsy as simply that in which the underlying cause remains unidentified. This resembles the first-mentioned doctrine in that it assumes primary epilepsy to be a clinical entity; it differs from it in implying that an underlying cause exists and only awaits discovery. The major distinction between idiopathic and symptomatic seizures is thus dissolved. But for this same reason the basis of the classification itself is rendered untenable. Such distinctions between idiopathic and symptomatic seizures as remain bear reference to the ability or inability of current-day practitioners to disclose the causes responsible for convulsive seizures; they point up no differences "in nature" between the phenomena under discussion. We are reminded that it is but a few years since biochemical and immunoserologic technics were insufficiently developed to permit demonstration of hyperinsulinism, hypocholesteremia, alkalosis and allergic states, and that prior to the development of these technics seizures arising from such organic disorders were soberly called "idiopathic." We are also reminded that many patients carrying post-traumatic cerebral scars, chronic brain abscesses and slowly growing brain tumors have been and continue to be treated as "idiopathic epileptics."

Fortunately it is possible to avoid these iatrogenic difficulties by completely divesting the term "epilepsy" of etiologic and pathologic connotations and using it in a strictly generic and descriptive sense, equivalent to recurrent convulsive seizures, spells, fits or attacks. Correspondingly, the terms "grand mal," "petit mal" "psychomotor," "focal," "jacksonian," "narcoleptic," "autonomic,"^{2,3} "cataleptic," "tonic," "decerebrate," etc., are employed strictly as descriptive adjectives, modifying the generic term "epilepsy." Where knowledge is sufficiently advanced, as in the instance of "focal," "jacksonian" and "decerebrate" attacks, these modifiers carry certain implications bearing upon the pathogenetic mechanisms involved, but under no circumstances do they suggest etiologic or pathologic factors.

On this view epilepsy is invariably regarded as a symptomatic disorder, comparable to fever, chills and high blood pressure. Cases in which apparently competent causative factors materialize in the course of investigation are designated by the term "paroxysmal convulsive disorder, secondary to ———." In those all too frequent instances in which causative factors are not apparent, the diagnosis, "paroxysmal convulsive disorder, etiology undetermined," is entered. The expectation is that not one but *many* causative factors will ultimately be revealed in connection with the latter group of cases. The labels "primary," "idiopathic," "essen-

tial," "real," etc., are rejected on the ground that they unwittingly engender false confidence and inhibit continuing inquiry into the factors responsible for each case.

Three important corollaries attend the above orientation. The first is that regardless of the "seat" of disease (e.g., chronic glomerulonephritis, islet cell adenoma of the pancreas, Addison's Disease, etc.), the development of a convulsion requires the participation of the brain. It is clear from recent experimental studies that the "motor areas" of the cortex are not essential;⁴ but it has been equally well demonstrated that the cerebral organ is an indispensable prerequisite to a convulsion.

A second corollary is that the pattern of a seizure merely expresses the fact that some particular neural mechanism has been usurped.⁵ From this it follows that *any* etiologic agent or pathologic process capable of so affecting the mechanism may be expected to produce similar clinical and electrographic manifestations. Therefore, data obtained by the most detailed scrutiny of a seizure (e.g., a grand mal fit) cannot be expected to reveal whether the attack was produced by alkalosis, uremia, hyperinsulinism, carotoid sinus hypersensitivity, cortical cicatrix, heart block or any of a dozen comparable "causes." The most that can be inferred from detailed observation of the seizure concerns the anatomic *locus* of a portion of the involved neural mechanism. Such data is, of course, important, especially if surgery is contemplated; but to answer questions as to *what* agent usurps the neural mechanisms and *how* it does so requires inquiry beyond mere study of the convulsive pattern.

The third corollary is that *multiple factors* rather than *a unitary "cause"* appear to subtend every seizure. This notion is evidently seldom entertained in clinical practice. In those cases in which a clear-cut agent such as plumbism, pancreatic islet adenoma, meningioma of the frontal lobe or post-pertussis cerebral cicatrix is uncovered, the clinician ordinarily feels justified in regarding it as *the cause* of the seizures, especially if therapeutic measures directed at its correction are followed by abolition of the seizures. A little reflection, however, soon indicates that such an agent provides at best an incomplete account of the seizures. For one thing, not all patients harboring such agents exhibit seizures; and for another, no quantitative relationship between the incidence of seizures and the degrees of plumbism, hypoglycemia, cicatrization, etc., has ever been shown to exist. Most pertinent of all, however, is the fact that despite the sustained presence of the pathologic agent the seizures occur only sporadically. These observations suggest that in the production of a seizure factors other than the obvious lesion must be involved and that under the best circumstances diagnostic inquiry brings out not *the cause* but *one or more potentially modifiable etiologic factors*.

The biochemical events within the brain leading up to a convulsive discharge have been the object

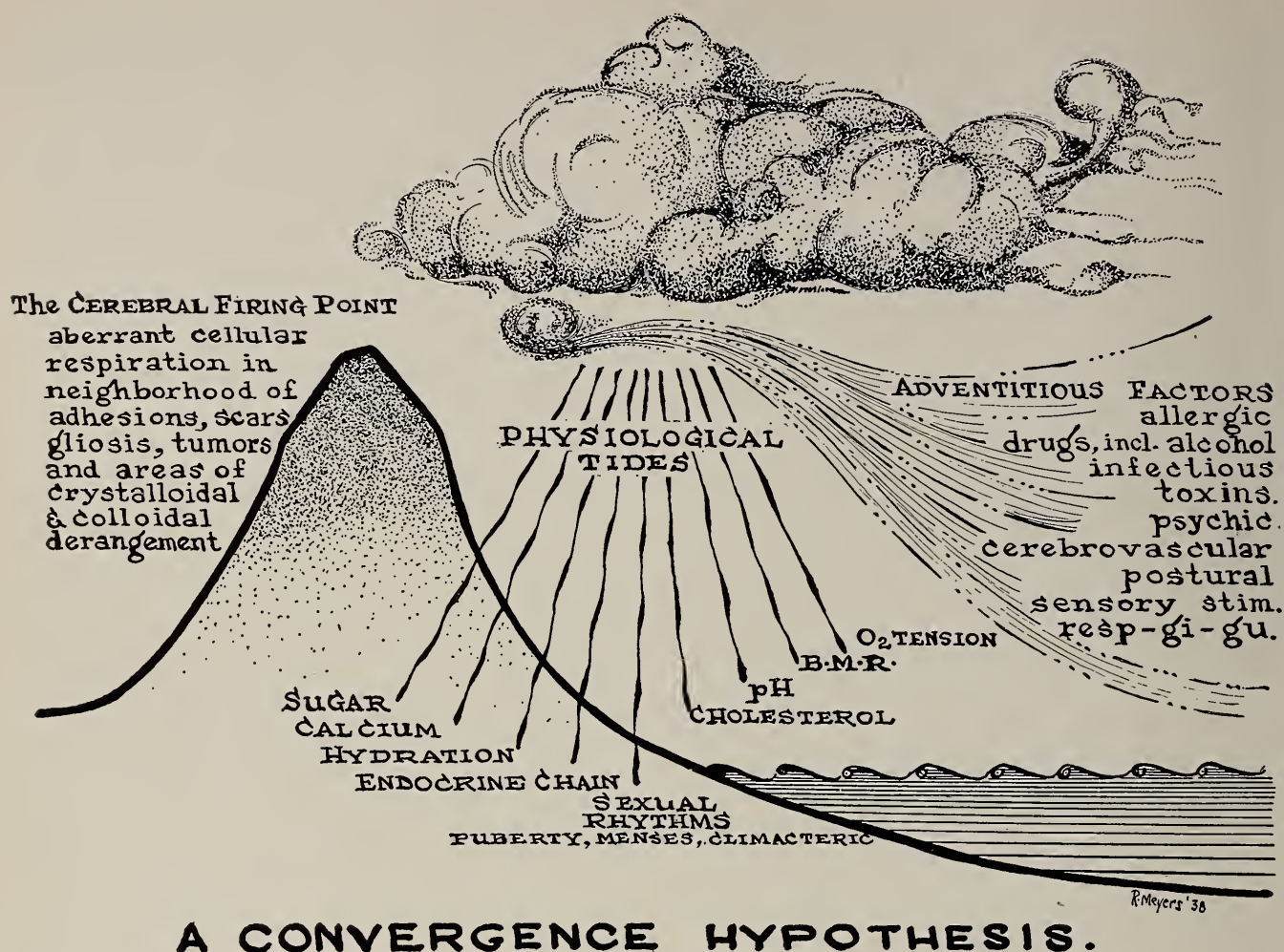


FIGURE 1. A convergence hypothesis to explain the production of a seizure. Three coexisting categories of "causative" agents are postulated: *Physiological Tides*; *Adventitious Factors*; and a *Cerebral Firing Point(s)*. The agents making up the first two categories may vary independent of each other; when they chance to fall into a mutually-augmenting phase, it may be supposed that their effects converge upon and ultimately depolarize the firing point(s). Depolarization is presumably accomplished by altering respiration in the neurones of the firing point(s).

of considerable research and theoretic speculation. Such information as is now available suggests that the basic disturbance is one of cellular respiration.^{6, 7, 8} It may be the consequence of oxygen want, hypoglycemia, Vitamin B insufficiency or impairment of cytochrome-C enzyme and/or other respiratory pigments.

A variety of factors, some physiologic, others pathologic, may help set the stage for this respiratory derangement. Although the gaps in current knowledge bearing on the matter are wide, sufficient evidence is at hand to suggest what some of the factors are and what their inter-relationships may be. These are envisioned in Figure 1, a hypothesis which likens the convulsive attack to a rain-storm. For the production of a seizure, three general types of "causative" factors are postulated: 1. *physiological tides*; 2. *adventitious factors* and 3. one or more *epileptogenic foci* in the brain. Their meteorologic counterparts are, respectively, a storm cloud growing out of the diurnal exchanges of water vapor between the earth's surface and the atmosphere; movement of the storm cloud under the influence of winds passing from areas of high to areas of low barometric pressure; and a mountain range

which forces the moving cloud to a higher and cooler level, lowers its vapor tension, and precipitates the storm. Under ordinary circumstances, no one of these factors appears capable of precipitating a convulsive episode. What seems to be essential is that from time to time several factors converge in such a way as to augment their individual effects.

1. *Physiological Tides*. Despite the efficiency of the organism's homeostatic mechanisms, daily and hourly fluctuations in the levels of blood sugar, oxygen tension, water, cholesterol, pH, calcium, gonadal secretions, etc., occur. These processes are continuously active in the organism and may be designated for our present purposes as physiological tides. During certain phases of these tides, for example, when blood sugar^{9, 10} and cholesterol^{6, 11, 12, 13} are low, pH high^{14, 15} or water retention "positive,"^{16, 17, 18} circumstances prevail which predispose the individual to convulse. This is inferred from the familiar fact that convulsions can often be produced by the use of insulin (hypoglycemia), hyperventilation (alkalosis) and antidiuretic agents (water-retention). It is reasonable to suppose that the influence of such physiologic conditions is appreciably intensified whenever several cycles chance to fall into phase with one another.

2. *Adventitious Factors*. In contrast to the physiological tides, adventitious factors are not continuously present. Their relation to seizures frequently escapes detection and when recognized at all they appear to have "happened to" the individual. Examples of such factors are allergens;^{19, 20, 21, 22} low-grade infectious processes; metallic, gaseous and other toxins; caffeine, absinthe, camphor, alcohol and other drugs; emotionally-charged experiences;^{14, 23} respiratory, digestive and eliminative aberrations; and a variety of visual, tactile, auditory, kinesthetic and cerebrovascular excitations.^{14, 5, 24} Such factors frequently escape the notice of both patient and

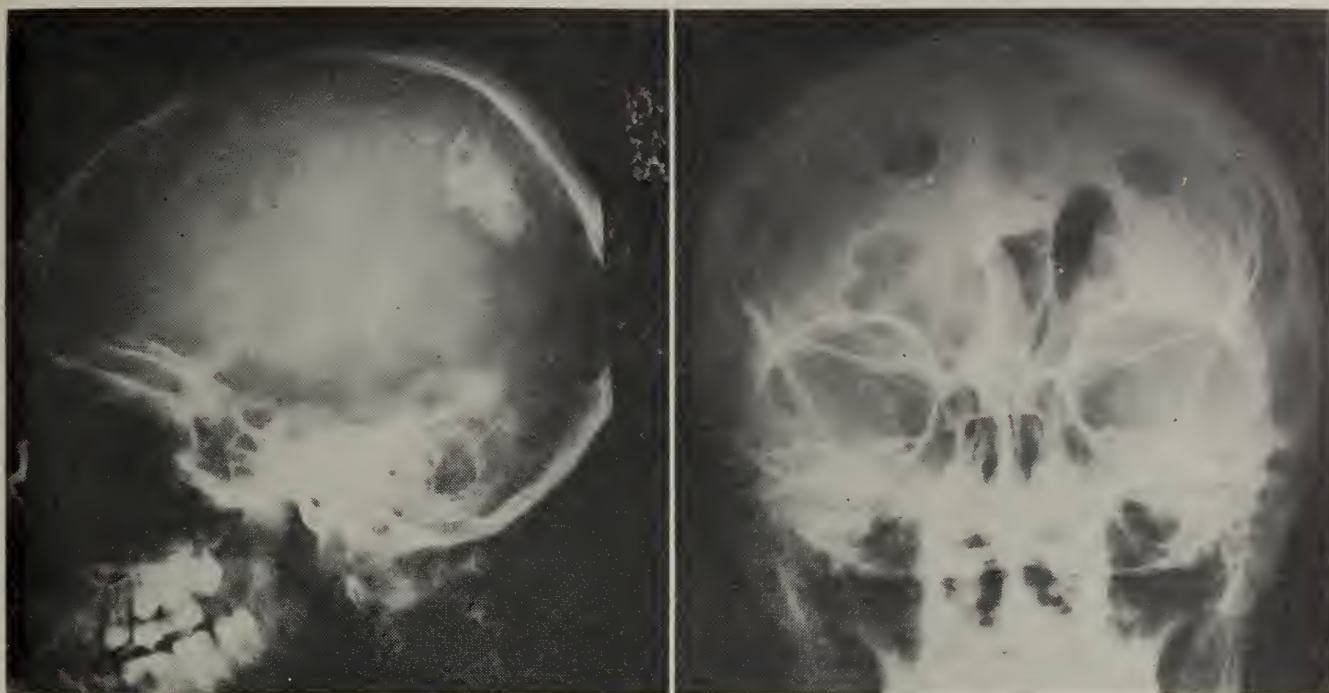


FIGURE 2. A = Right lateral roentgenogram (plain) of head of 12 year old boy showing a calcified lesion in parietal lobe. When extirpated, this proved to be tuberous sclerosis. B = Anteroposterior ventriculogram of 28 year old male showing shift of ventricular system to left. Operation revealed a cystic astrocytoma of the right temporal lobe.

physician. For the most part, they are in themselves incapable of precipitating a convulsive seizure; however, they appear capable of augmenting the potential of the above-mentioned physiological factors for setting off a seizure.

3. *The Cerebral Epileptogenic Focus.* Brain tissue incorporated within or adjacent to scars, tumors, degenerative and congenital dysplastic processes frequently exhibits an exalted state of excitability. Such a region is referred to as an "epileptogenic focus" or "firing point." As previously remarked, the fact that epileptic seizures occur paroxysmally constitutes clear-cut evidence that the presence of the cerebral lesion is insufficient in itself to explain the convulsions; it appears necessary to suppose that from time to time the epileptogenic focus becomes "primed" by the convergence of physiologic and adventitious factors. Under this circumstance its neurones become depolarized and an electrical wave front spreads rapidly through the brain.^{25, 26} It is important to recognize that more than one epileptogenic focus may be present in a single patient.

The clinical history, the physical, neurologic and psychiatric examinations, the laboratory studies

and ordinary roentgenographic examinations of the skull frequently fail to indicate the site of an epileptogenic focus. A negative finding of this sort does not, however, warrant the conclusion that no firing point is present. Cerebral scars and cysts, vascular anomalies, slowly growing tumors and numerous other surgically-amenable lesions may exist for upwards of 20 years and yet be manifested in no other fashion than as recurring convulsions. In all such cases it is the responsibility of the neurosurgeon to implement special methods of inquiry with a view to determining *whether* a firing point exists; *where* it lies; *what* its pathologic nature is; and *what* the likelihood is of dealing

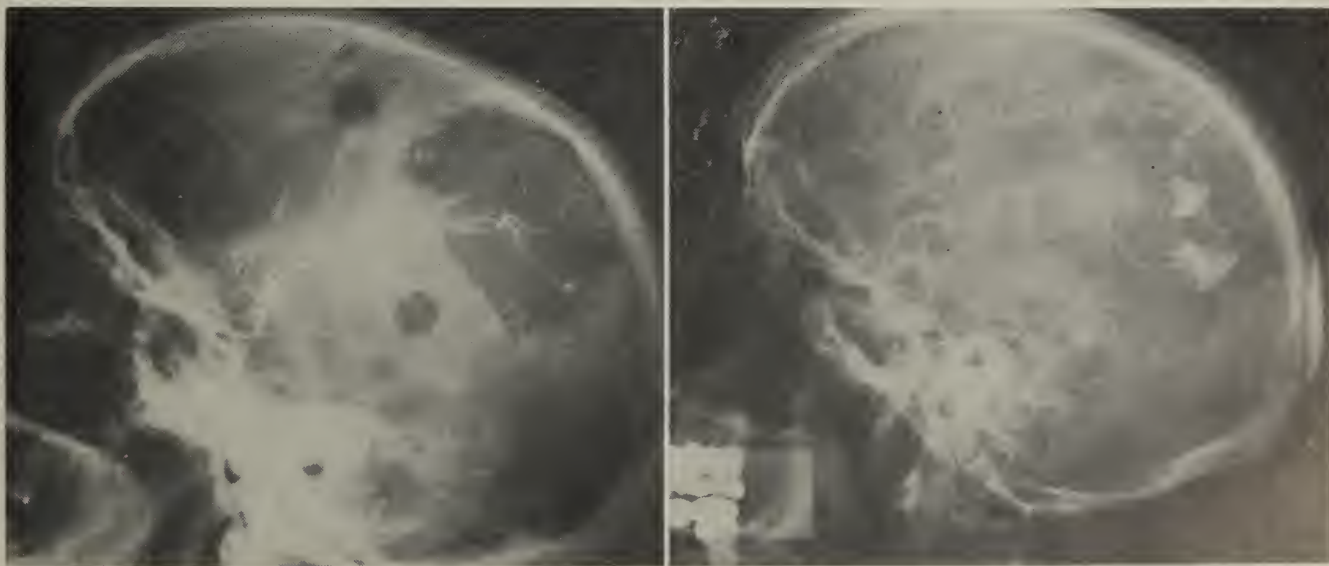


FIGURE 3. A = Right lateral arteriogram of 33 year old male showing berry-aneurysm of middle cerebral artery which had so impaired circulation as to produce an area of encephalo-malacia of the mid-parietal lobe from which "focal" seizures were discharged. B = Right lateral phlebogram of middle-aged female showing angiomatous malformation on the cortex of angular gyrus. Note excessive size of vein draining into superior longitudinal sinus.

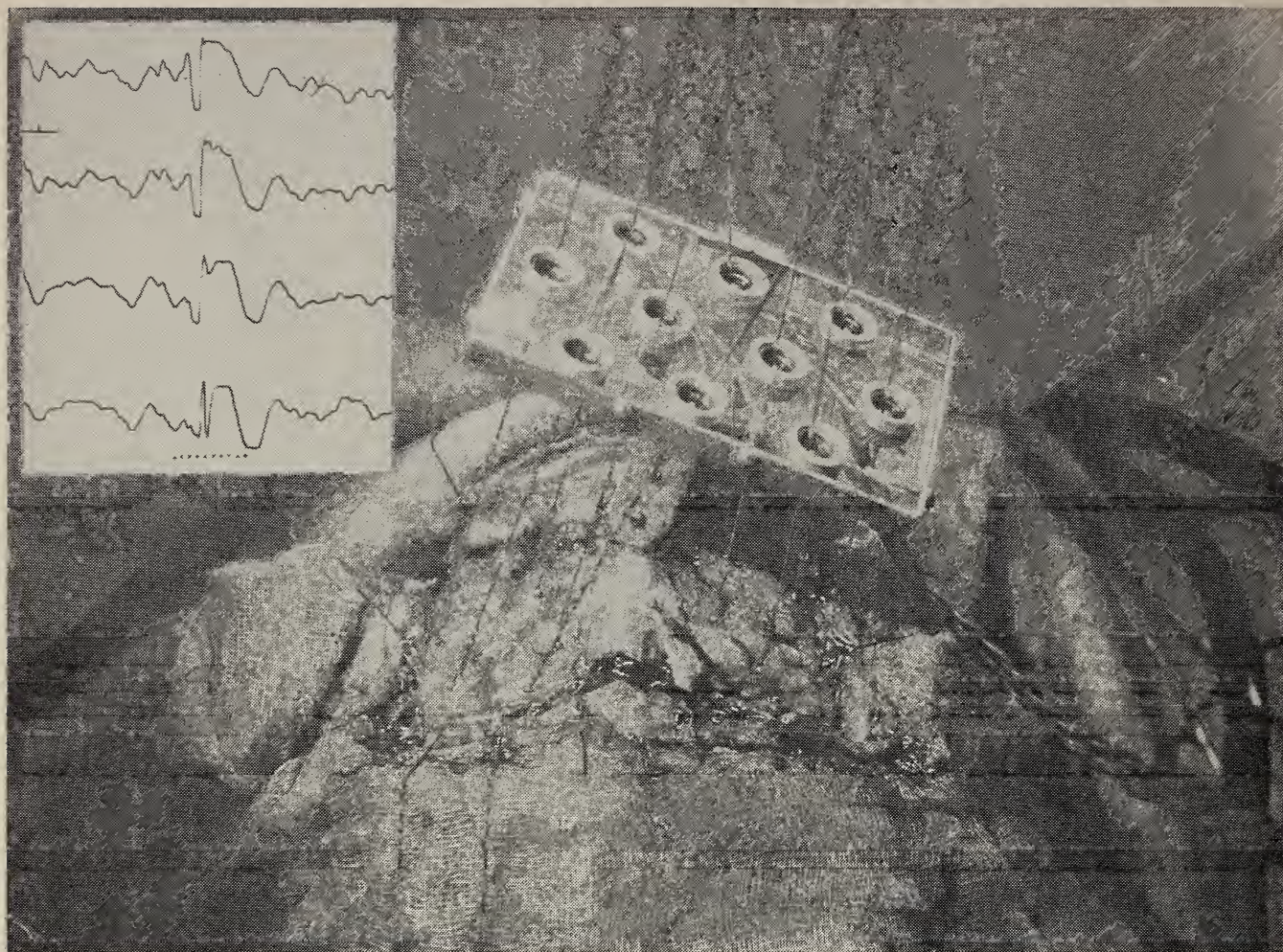


FIGURE 4. Electroencephalography. Set-up showing ten "pick-up" electrodes (on Marshall Carriage) for simultaneous recording of electrical potentials from frontal lobes. The cables lead to an 8-channel electroencephalograph. This presents a vertical view of the head, the patient lying in the supine position. Left frontal lobe is on reader's left; right, on reader's right. The dural flaps have been reflected over the midline. Inset: A "spike" discharge (.....) from one cortical region attended by spread to three neighboring regions. Note that the "spikey" counterparts of the sharp spike exhibit an opposite direction: the sharp spike is electro-negative; its counterparts, electro-positive.

with it successfully by surgical methods. For such purposes, the following diagnostic tools are at his disposal:

1. Pneumoencephalography
2. Ventriculography
3. Cerebral angiography
 - a. arteriography
 - b. phlebography
4. Direct electrocorticography
5. Faradic stimulation of the cortex
6. Radio-isotopic scanning of the cranium

1. *Pneumoencephalography.* When successful, this procedure permits satisfactory visualization of the cerebral ventricles. In addition, it provides information concerning the cerebral subarachnoid spaces and hemispherical surfaces not ordinarily obtainable by the use of ventriculography. The presence of small cerebromeningeal scars and atrophic cortical areas may be betrayed as abnormal pools of subarachnoid gas on the hemispherical surface.

2. *Ventriculography.* This procedure may reveal a displacement, distortion or dilatation of the ventricular system and provide in this way presumptive evidence of the existence of one or more firing points. Porencephalic outpocketings are particularly well visualized. Ventriculography is decidedly the method of choice where tumors, clots and other space-encroaching lesions are suspected. In the presence of clinical signs of increased intracranial tension it has proved a much safer procedure than pneumoencephalography (Figure 2.)

3. *Angiography.* It frequently happens that pneumoencephalography and ventriculography fail to demonstrate vascular types of lesion, particularly the smaller hemangiomas, vascular malformations and aneurysms. These lesions are more

readily visualized by injecting a radio-opaque medium (e.g., thorotrast or diodrast) into the arteries of the neck and timing the X-ray exposures in such a way as to "catch" the medium *en route* through the cerebral arteries (arteriography) or veins (phlebography). Whenever port wine stains, vascular naevi and telangiectatic lesions are discovered on the patient's face, scalp or neck, corresponding cerebrovascular lesions should be suspected and angiographic studies implemented (Figure 3).

4. *Electrocorticography.* This constitutes a refinement of electroencephalography.^{27, 28, 29} In performing electrocorticography, multiple leads are placed directly upon the exposed cortex in such a way as to pick up the electrical potentials of relatively circumscribed regions. The locus of the firing point is thought by many investigators to be revealed by "spike" discharges or other abnormal electrical waves (Figure 4).

5. *Faradic stimulation of the cortex.* This procedure aims to demonstrate a cortical region which, upon being stimulated by a weak current, consistently produces a convulsive attack having the subjective and objective characteristics of the patient's usual seizures.^{30, 31, 32, 33, 34, 35} The procedure is usually carried out under local anesthesia and if successful in demonstrating a firing point is usually followed by surgical extirpation of the suspected cortical area.

6. *Radio-isotopic Scanning of the Cranium.* In this procedure, a radio-isotope (diodofluorescein) is injected into the antecubital vein. The material is taken up by certain intracranial lesions in quantities differing sufficiently from those in normal brain tissue to permit recognition by the use of a Geiger-Müller counter. The frequencies of gamma discharge are recorded automatically and where significant *differentia* are disclosed a cerebral lesion may be suspected. This method, introduced by Moore, has been extensively developed by Davis *et al*³⁶ and is applicable to the study of epilepsy.

In the early stages of their development neoplasms may be too small to be revealed by any device known to modern medicine. Even more extensive tumors, such as the infiltrating *astrocytoma*

diffusa, can escape detection for many years. For these and other reasons, it is important to observe that failure to detect a firing point by the use of the above-described measures does not warrant the conclusion that no lesion exists. Neurosurgical inquiry may have to be repeated periodically. The rewards of persistent investigation are sufficient to recommend its regular employment.

II. THERAPY

No serious problem in therapeutic indications is posed when cerebral tumors, abscesses or gross clots are in evidence. Such lesions require prompt surgical intervention. In all other cases, however, neurosurgical measures directed at the control of epilepsy should be instituted only when conservative measures have failed. *It is essential that the ineffectiveness of the standard anti-convulsant measures, including drugs and diet, should be demonstrated for each individual case by systematic use under direct supervision.* Radical forms of treatment cannot otherwise be justified.

The surgery of epilepsy is essentially the surgery of the firing point.^{31, 33, 34, 35, 37, 39} The measures available for identifying the firing point have already been outlined. Providing that the focus has been properly localized, it can be removed by subarachnoid extirpation or block resection (Figures 5, 6). The only serious barrier to its surgical removal is the physiologic and psychologic importance of the cerebral area in which it happens to be located. It goes without saying that the production of limb paralysis, apraxia and aphasia must be guarded against. Whenever questions arise at the operating table concerning the functional importance of a given cortical region, an attempt should be made to resolve them by local procaine infiltration of the region. If no dysfunction follows the injection, the area may be ablated with reasonable impunity.

Aside from the surgical procedure above described, Scarff⁴⁰ has reported lysis of the pacchionian bodies to be a useful procedure in selected cases of "focal" epilepsy and Bailey has recently employed block resection of the anterior portion of the temporal lobe in the endeavor to abolish psychomotor seizures. The clinical results of Bailey's procedure cannot be evaluated as yet.

Over the years, a considerable amount of useful anatomic and physiologic data referable to the human has been acquired incidental to the surgery of epilepsy. However, the over-all, long-term results of operative treatment in epilepsy are far from sanguine. Even when obvious cortico-meningeal cicatrices, atrophic cortical areas and similar macroscopic lesions are "confirmed" electrically as firing points, only about 20 per cent of patients can expect to be freed of their convulsive attacks. The percentage of such "cures" is still lower in those cases in which the cortex appears grossly normal and in which identification of the firing point depends mainly upon electrographic^{38, 26, 27}

and electrostimulative methods. In most clinics dealing extensively with the epileptic problem, the operative mortality is approximately four to five per cent.

Improvement of some degree is reported by some authors to have been achieved in between 50 and 65 per cent of cases subjected to operation. The efficacy of surgery in such cases, however, does not appear to have been unequivocally established for

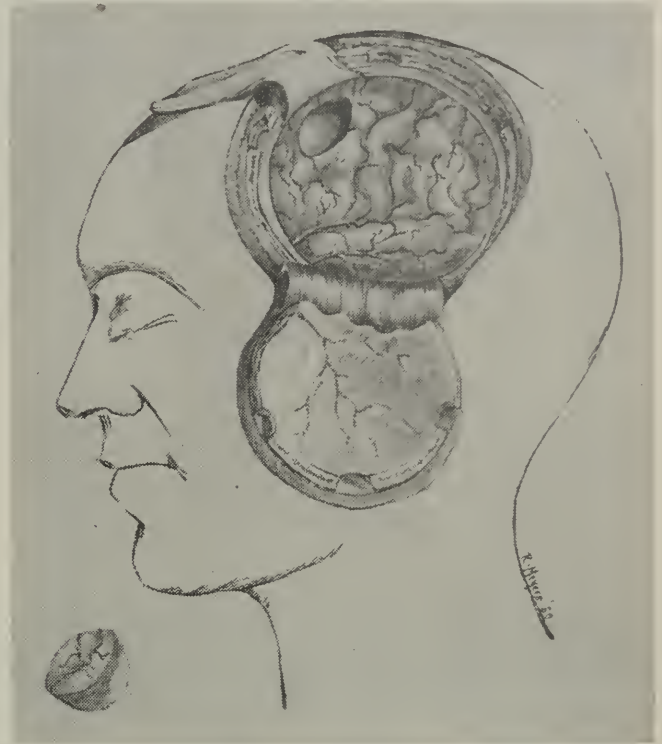


FIGURE 5. Illustration of operative field exposed for faradic stimulation. The firing point (inset) is presumed to have been identified in the left premotor region and extirpated to a depth of approximately 2.5 cm.

the reason that such "improved" patients continue to follow anti-convulsant medical regimens and in many cases the post-operative regimens do not constitute reduplications of the pre-operative regimens. Furthermore, new drugs which were not available prior to operation have been employed in some of these patients. Finally, a control series has not been run *pari passu* with the operative cases. Thus, despite a large accumulation of clinical data, we lack the sort of information that might have been reached during the last quarter-century through more rigid adherence to scientific method.

In the surgery of epilepsy, as elsewhere in surgery, one of the major problems is the proper selection of cases. It is increasingly clear from the reports of surgeons having wide experience in the field that *those patients do best who show gross but relatively circumscribed cortical lesions.* Failures are particularly likely to result when the patient harbors two or more firing points, only one of which is identified at the operating table. Another probable source of failure is the placing of implicit reliance upon the electrocorticographic "spike" as an indicator of the firing point. Recently acquired

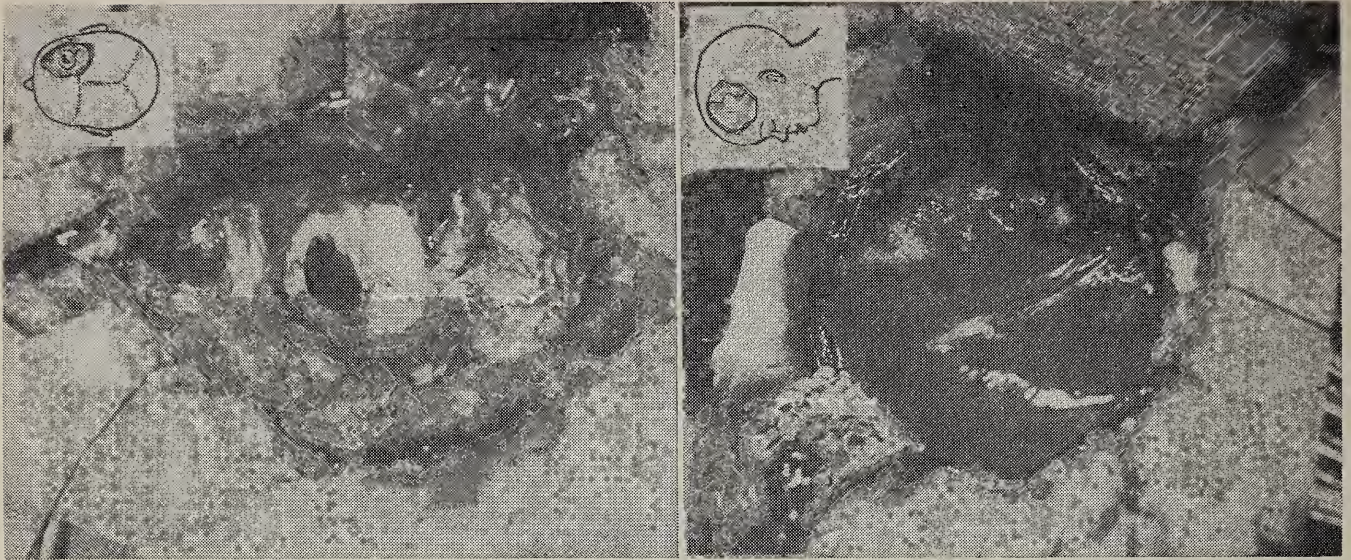


FIGURE 6. Examples of macroscopically-apparent firing points. A = Post-traumatic cicatrix and cyst-formation in right frontal lobe of 31 year old male. The cyst has been partly uncapped to provide a view of its cavity. B = Extensive degenerative lesion of left frontal lobe of 3 year old boy. The spongy frontal lobe can be seen through the arachnoid. Posteriorly, it is bounded sharply by normal-appearing fronto-temporal cortex.

evidence³² indicates that "spikes" are not infrequently present in the thalamus and corpus striatum as well as in the cortex, from which fact it may reasonably be postulated that they can be demonstrated in any part of the epileptic brain explored with pick-up electrodes (Figure 7). It is significant

that the "spike discharges" demonstrable in these various cerebral regions may occur independent of as well as synchronous with one another. This may mean that the "spikes" are not valid indicators of the firing point; or that a considerable number of independent firing points may exist deep in as well

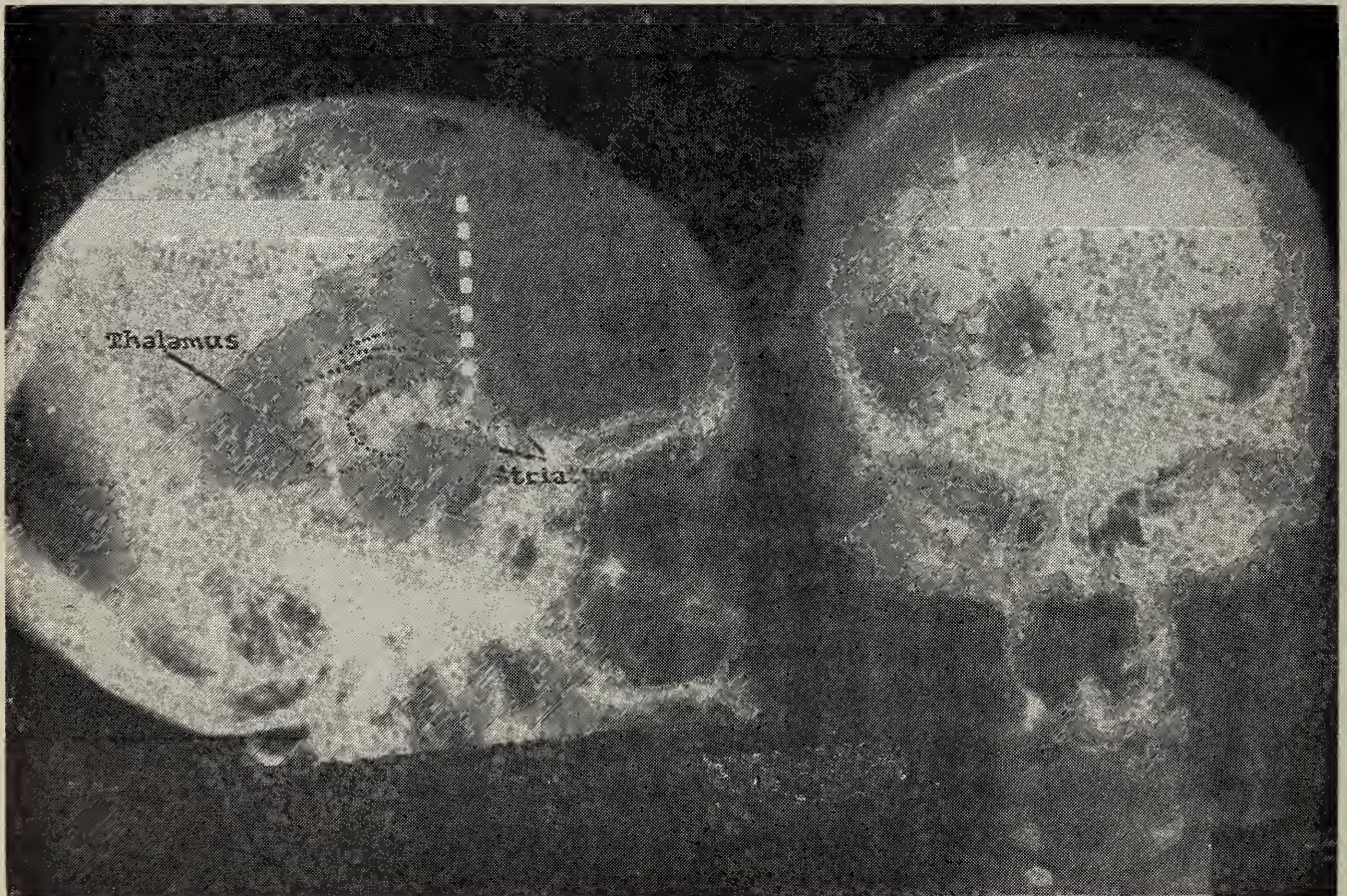


FIGURE 7. Lateral and A-P ventriculograms of 36 year old woman showing 12 deep pick-up electrodes in place—4 in the right thalamus and 8 in the right striatum. The electrical potentials derived from these structures can be compared simultaneously with those from the scalp surface (cortex). "Spikes" wholly independent of those recorded from the cortex have been recorded from the thalamus and caudate nucleus.³² (From Meyers, R., Knott, J. R., Hayne, R. A. and Sweeney, D. B.: *J. Neurosurg.*, 7:337-346, 1950, with kind permission of the editors and publisher.)

as on the surface structures of the brain. In either case, cortical extirpation of a single focus stands a relatively poor chance of effecting the ideal therapeutic result.

SUMMARY

1. The role of the neurosurgeon in the care of epileptic patients is twofold: diagnostic and therapeutic. In both areas he is concerned closely with the cerebral "epileptogenic focus"—its locus, pathologic character, etiology and amenability to surgical attack. He is similarly concerned with the basic question as to how such a focus "detonates" brain mechanisms to produce the various seizure-patterns observed in clinical practice.

2. The "epileptogenic focus" may be envisioned as set against a background of dynamic biophysical and biochemical events, some physiologic, others pathologic. From time to time the separate effects exerted by such factors may so augment one another as to alter cell-membrane permeability, compromise cellular respiration and depolarize the neurones of the "epileptogenic focus." These events have been embodied in a "convergence" hypothesis which serves to correlate pertinent facts and render them clinically meaningful.

3. The special diagnostic tools of the neurosurgeon include (a) pneumoencephalography, (b) ventriculography, (c) angiography, (d) direct electrography of cortical and deep-lying cerebral structures, and (e) electrical stimulation of cortical regions suspected of harboring an "epileptogenic focus." The indications for and relative merits of these measures are briefly discussed.

4. In broad terms, neurosurgical therapy aims to remove the "epileptogenic focus." Operation should be considered elective in all cases except those in which neoplasms, gross clots and chronic abscesses are suspected. It should be resorted to only after recognized conservative measures have been proved ineffectual for the case at hand. The operative mortality is approximately 4 to 5 per cent. The overall expectation of complete and enduring freedom from seizures does not exceed 20 per cent. Favorable results are obtained mainly in cases where circumscribed, macroscopic cortical lesions exist.

5. Some reasons are proposed to account for the disappointingly large number of therapeutic failures following surgery.

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MEDICAL LICENSES ISSUED FROM

January 1-March 5, 1951

Medical licenses were issued to the following during the period of January 1 to March 5, 1951: Thomas A. Angland, Iowa City; Dorothy J. Arnold, Iowa City; William J. Barbour, West Des Moines; Phillip G. Couchman, Des Moines; James W. Culbertson, Iowa City; Donald B. Dose, Clinton; Donald L. Grieme, Ames; Raymond F. Guese, Denver, Colo.; Richard M. Kafka, Des Moines; Joseph W. Kresock, Davenport; John K. MacGregor, Madison, Wisc. and Eric M. Swanson, Iowa City.

SURGICAL LESIONS OF THE CHEST IN CHILDREN

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IN THE last ten or 15 years rapid advances in the fields of anesthesiology, bacteriology, antibiotic therapy and the more accurate knowledge of the physiology of respiration have given great impetus to the surgical approach to numerous chest wall and intrathoracic lesions. At first the surgical therapy for those lesions was applied in adults but it was soon used in children and even infants and the newborn. Surgical lesions of the chest in children in general are quite different than the ones seen in adult patients. Many of the lesions in children with which the surgeon is confronted today are on a congenital or developmental basis needing early or immediate correction to save either the patient's life or to improve the patient's condition. In the type of institution in which we are working, the number of congenital lesions involving the chest that need surgical correction are considerable. This is particularly true since corrective procedures for cardiovascular defects have become a standardized procedure. This discussion will consider some of the problems that arise in the care of such patients.

THORACIC CAGE

In children the thoracic cage, the ribs and particularly the sternocostal articulations are extremely pliable. For this reason compression of the chest wall may produce rather extensive intrathoracic trauma without producing rib fractures. It is well known that some compression injuries in children

such as are sustained in being run over by the wheel of a car, may produce nothing more than a traumatic asphyxia without any other serious injuries. Occasionally however one may encounter rupture of one of the main bronchi following trauma of this sort. With healing, stenosis of the bronchus and atelectasis of the respective lung may take place. This condition may not be recognized until many months or even years after the original injury.

Infections of the chest wall in children are now not too common. Empyema nescensitatis or spontaneous tuberculous fistulae are fortunately things of the past. We have encountered instances of actinomycotic infections of the lung with invasion of the rib cage. The diagnosis in those instances was made by exploratory thoracotomy and biopsy. The response to sulfadiazine and penicillin therapy was extremely gratifying. (Figure 1).

The nature of the congenital deformity, pectus excavatum or funnel chest, has been known for a long period of time. The importance of surgical treatment for it has not been recognized and instituted until recently. The exact reason for the development of the funnel chest is not too clear but it is felt that there is an abnormal ligamentous attachment between the midportion of the diaphragm and the lower end of the sternum. During the respiratory motion of the diaphragm there is continuous tugging on the rather mobile lower portion of the sternum causing retraction. If this condition is permitted to progress, extreme chest deformity may result with marked displacement of the heart and mediastinal structures or compression of those structures. It is therefore being advocated at the present time to correct this deformity at a young age, even at the age of one year or earlier. In this very young age group nothing more than freeing the sternum from the diaphragm may be necessary. If the child has advanced in age and

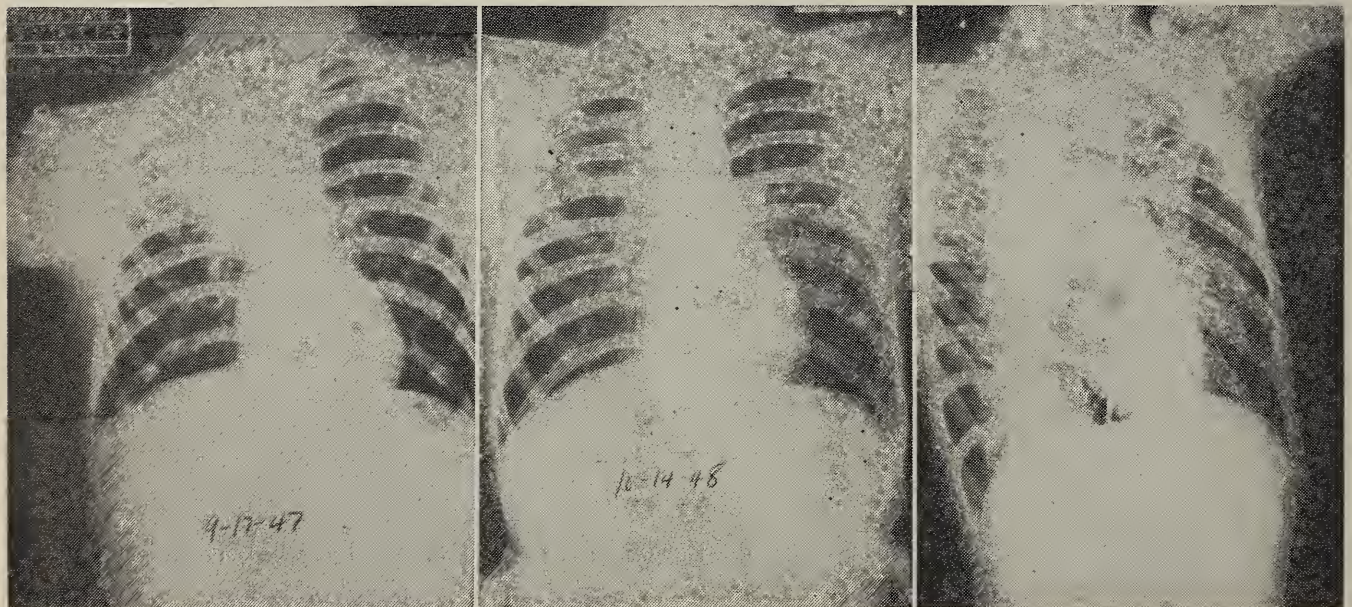


Fig. 1. Actinomycosis of lung and chest wall. Two roentgenograms on right demonstrate healing and a normal bronchogram.



Fig. 2. Pectus excavatum—Preoperative and postoperative appearance.

the deformity has become fixed, much more extensive surgery with freeing of the entire sternum and fixing it in normal position is the procedure to be carried out. (Figure 2).

PLEURAL SPACE

The most common condition encountered affecting the pleural space alone in children is empyema. Since most empyema of childhood is postpneumonic in origin it is now being seen less frequently. At the present most pneumonia is being treated with antibiotics and thus does not become advanced and only a few patients develop this complication. We, however, see occasional instances of postpneu-

monic empyema in patients who have not been treated with antibiotics. Also occasional cases are encountered where the empyema and the antecedent pneumonia has been treated by antibiotic therapy but the infection has been refractory. In such instances there is a definite change in the characteristics of the empyema fluid. It is not purulent but serous in nature. On culture it may be sterile and the empyema wall is less thick due to a lesser degree of deposition of fibrin over the pleural surfaces.

The present day treatment of empyema in children can be summarized briefly: If it is acute and the infant is small, repeated aspirations with re-



Fig. 3. Massive empyema of the right pleural space treated by decortication.

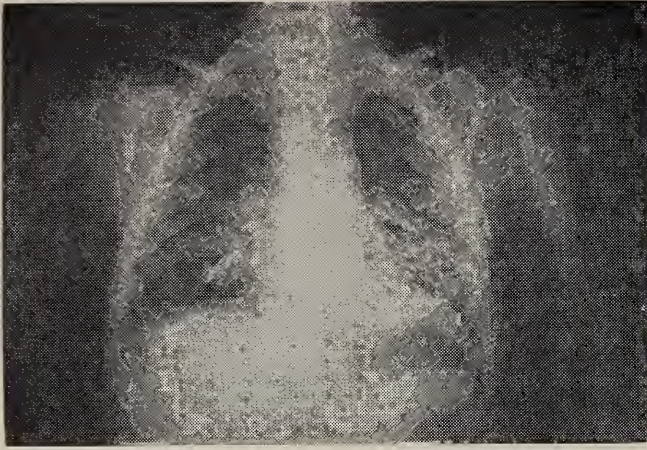


Fig. 4. Bronchogram showing cystic bronchiectasis of left lower lobe.

instillation of penicillin may produce complete obliteration of the empyema space and thus lead to cure. At times the empyema may become loculated and adequate aspiration is not possible. In the days before World War II, most empyema after it had entered the chronic state was treated by segmental rib resection with open drainage to permit the underlying lung to re-expand. This often took many weeks and many times resulted in chronic chest deformities due to the scarring of the parietal pleura. In growing children it occasionally resulted in permanent scoliosis. The principle of pulmonary decortication that was at first used in the treatment of hemothorax of traumatic origin is now being used routinely in the treatment of such chronic empyema. This permits complete expansion of the underlying captive lung and assures normal pulmonary function after re-expansion of the lung parenchyma. Removal of the fibrinous layer over the parietal and diaphragmatic surfaces will also permit good motion of the rib cage and diaphragm with a minimum amount of scarring. We have used this treatment in children as young as 14 months of age without any undue difficulty. The period of hospitalization and the after treatment is reduced to a minimum. (Figure 3).

LUNGS

Lung abscesses in children are not as commonly seen as was true several years ago. Many more tonsillectomies and other pharyngeal or intra-oral procedures were done at that time and the technic for those procedures was not as well developed. Lung abscesses in children are nearly always due to aspiration either of foreign bodies or of contaminated blood clots secondary to pharyngeal or intra-oral surgical manipulation performed under general anesthesia. When lung abscesses occur in children intensive antibiotic therapy many times will cause rapid healing of the parenchymal lesions. If the lung abscess becomes chronic and this is generally after a period of about four to six weeks following recognition of it, either drainage of the lung abscess or resection of the involved pulmonary tis-

sue may become necessary. If the abscess formation is unilobar or involves only one side of the chest or if there is only one lung abscess present, resection

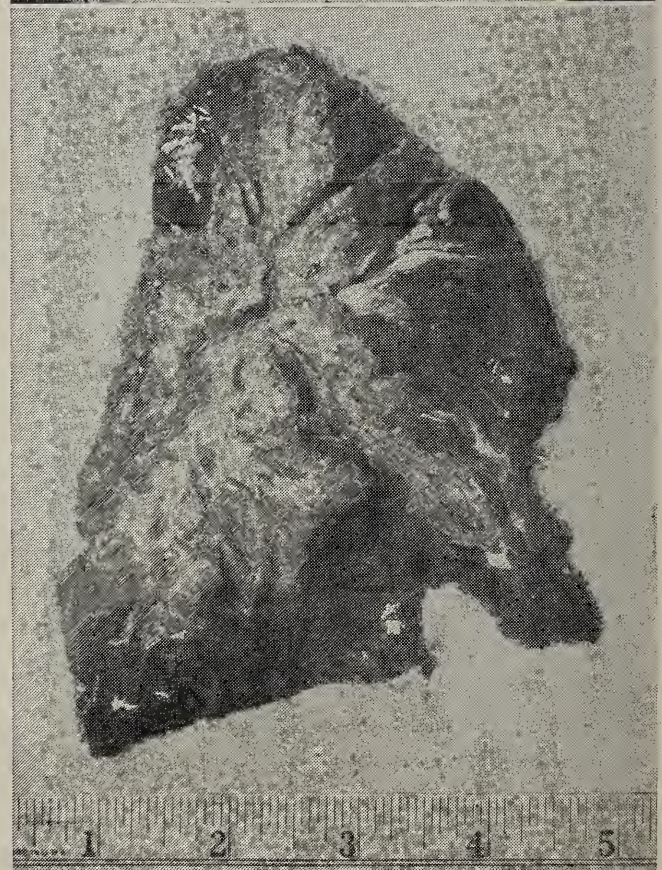
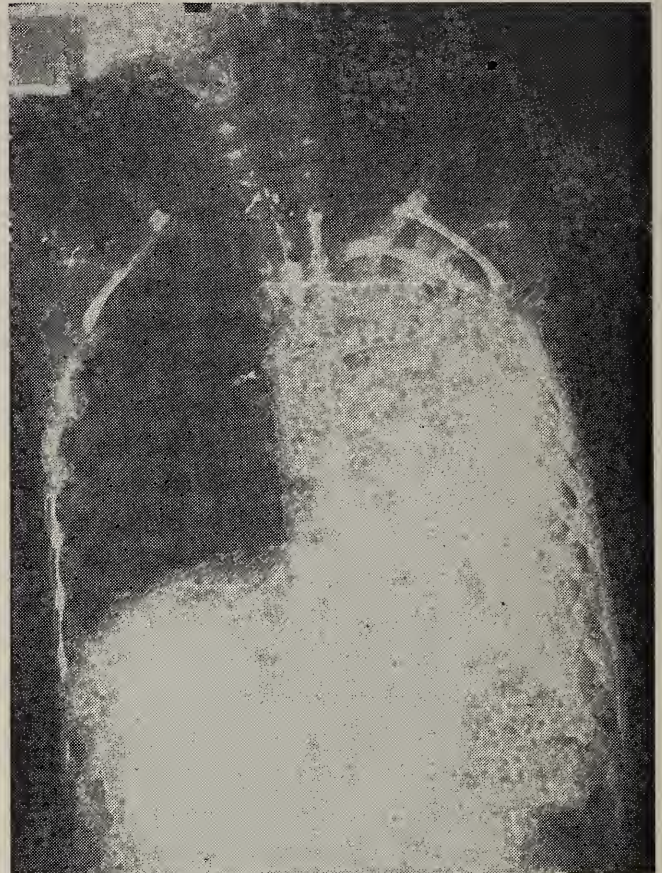


Fig. 5. Bronchiectasis involving entire left lung showing preoperative bronchogram and resected specimen.

of the involved tissue is certainly the procedure of choice.

BRONCHIECTASIS

Bronchiectasis is primarily a disease of youth and early adult life and it is a disease which if not treated in proper time will often prove fatal. People who develop bronchiectasis in childhood or early adult life rarely live above the age of 35.

The etiology of the disease is probably on the basis of repeated severe episodes of bronchial obstruction in childhood. The history of attacks of pneumonia following such childhood diseases as whooping cough, measles or scarlet fever, usually can be elicited. The bronchial tree in children is much more susceptible to infection than is that of the adult. When chronic inflammatory changes in the bronchi are established normal ciliary action of the bronchial mucosa is destroyed. This leads to retention of secretions and pus. Frequent respiratory infections bring about exacerbation of this process with gradual irreversible changes in the tissues of the bronchial wall due to breakdown of the muscle, elastic tissue and cartilage. Continuous chronic and sometimes acute pneumonitis exists surrounding the involved bronchial tree of a growing lung and normal development is disturbed. Gradual dilation of the bronchi occurs.

For the development of true bronchiectasis apparently three factors must be present: Obstruction of branches of the tracheobronchial tree, atelectasis of the surrounding lung parenchyma and infection distal to the site of obstruction. The

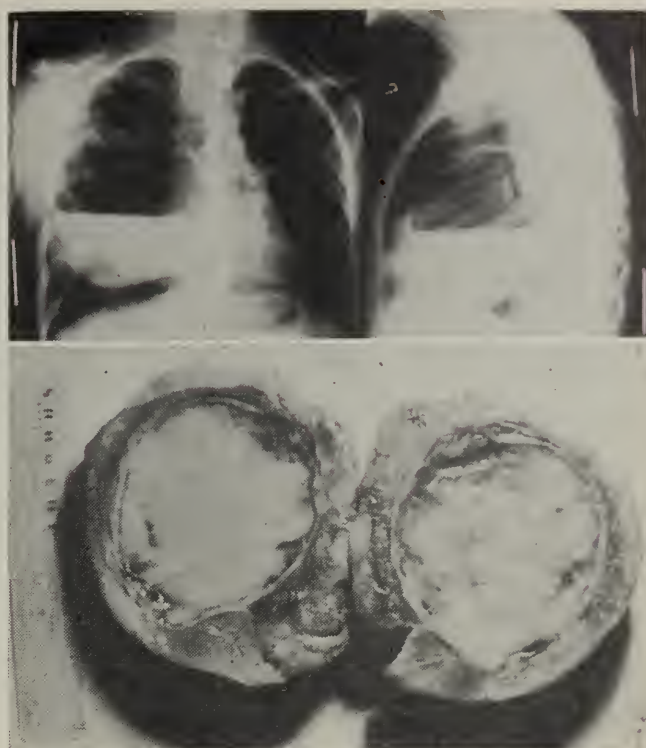


Fig. 6. Bronchiectasis and infected lung cyst showing roentgenogram and resected right lung.

development of the lesion is exaggerated if these features are present while the lung is undergoing active growth. Experience has shown that bronchiectasis occurs in 40 per cent of the instances in children under the age of ten years and in about 20 per cent of the instances in patients between

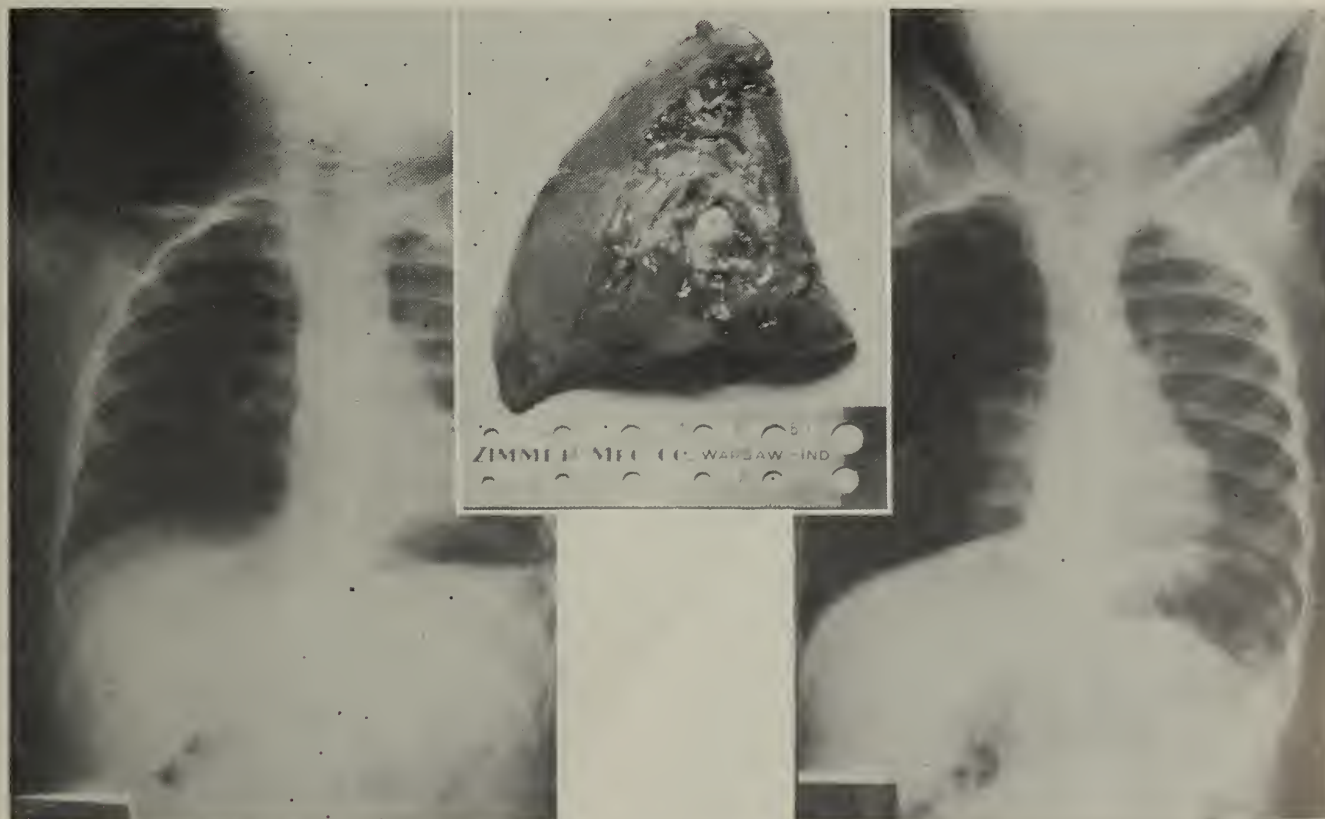


Fig. 7a. Obstructive emphysema of lung resulting in tension pneumothorax with complete atelectasis of right lung.

Fig. 7b. Resected right lower lobe containing foreign body (finger of a rubber doll).

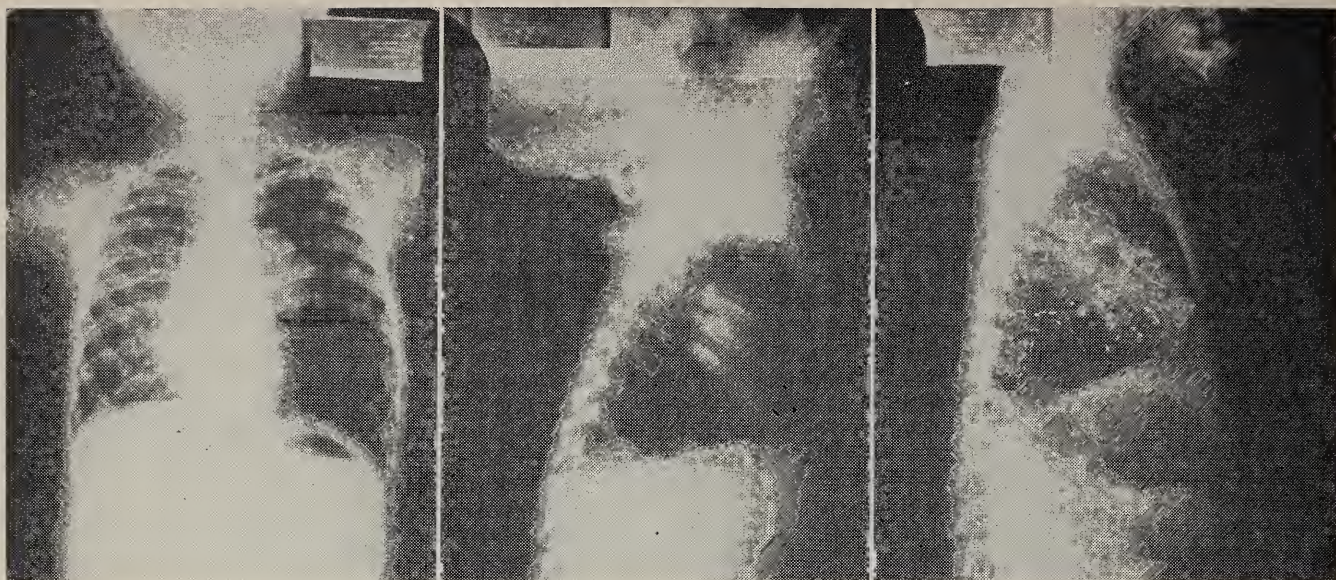


Fig. 8. Mediastinal tumor: bronchogenic cyst.

the ages of ten and 20 years. That means that 60 per cent of the cases of symptomatic bronchiectasis are seen in patients below the age of 20 years.

This disease is quite common but often not recognized. Many times it is neglected and passed up as bronchitis, paranasal sinus disease or asthma. The only curative treatment for advanced bronchiectasis is surgical extirpation of the involved lung parenchyma either by pneumonectomy, lobectomy or segmental resection of the involved tissue. (Figures 4, 5, 6.)

FOREIGN BODIES

Children frequently will aspirate or swallow foreign bodies. Most of these can be extracted by the endoscopist with the bronchoscope or esophago-

scope. Occasionally we do see children who have aspirated foreign bodies into the tracheobronchial tree and complications have resulted such as lung abscess, bronchiectasis and the sequelae thereof. We have encountered a few instances where immediate surgical intervention became imperative shortly after aspiration of the foreign body. Development of either obstructive emphysema or complete atelectasis following aspiration of the foreign body is frequently seen and is well known. Rupture of lung parenchyma into the pleural space due to obstructive emphysema causing tension pneumothorax does occur and occasionally we see instances where surgical intervention becomes imperative shortly after endoscopic manipulation, if the latter be difficult and complicated. (Figure 7.)

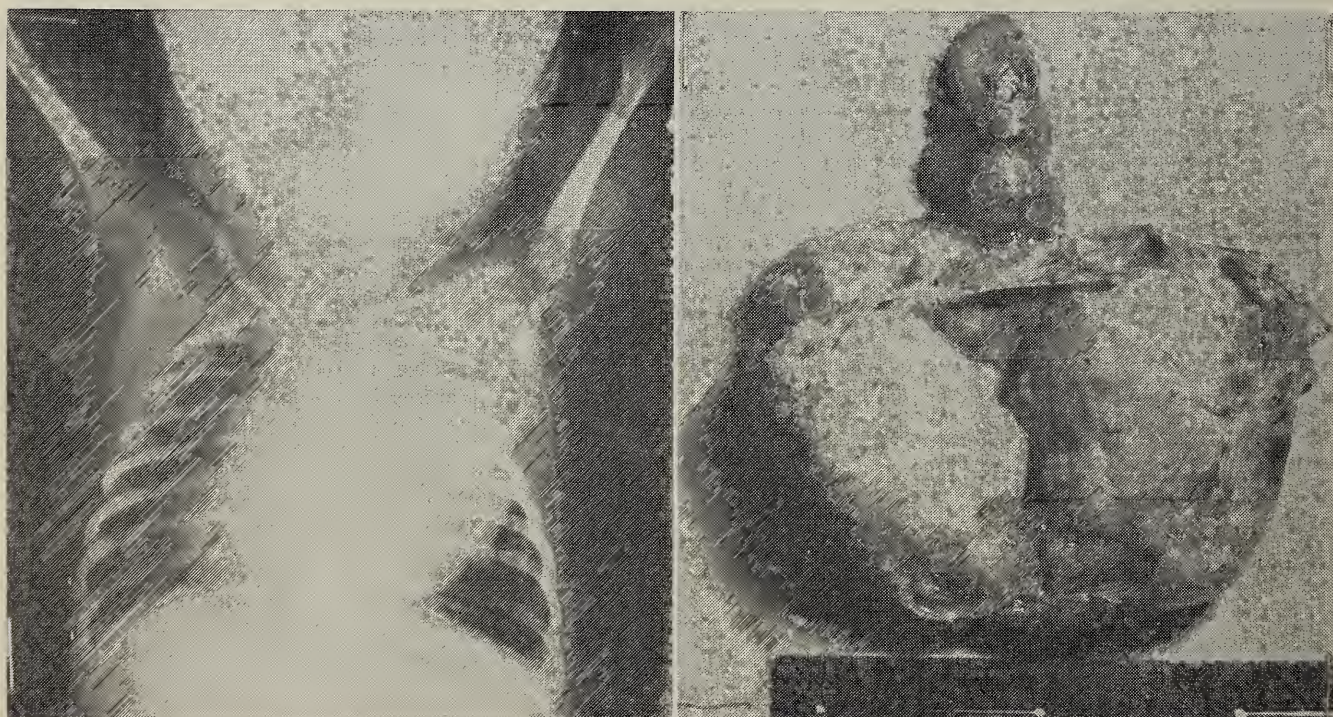


Fig. 9. Mediastinal tumor—Teratoma. Preoperative roentgenogram and gross specimen.

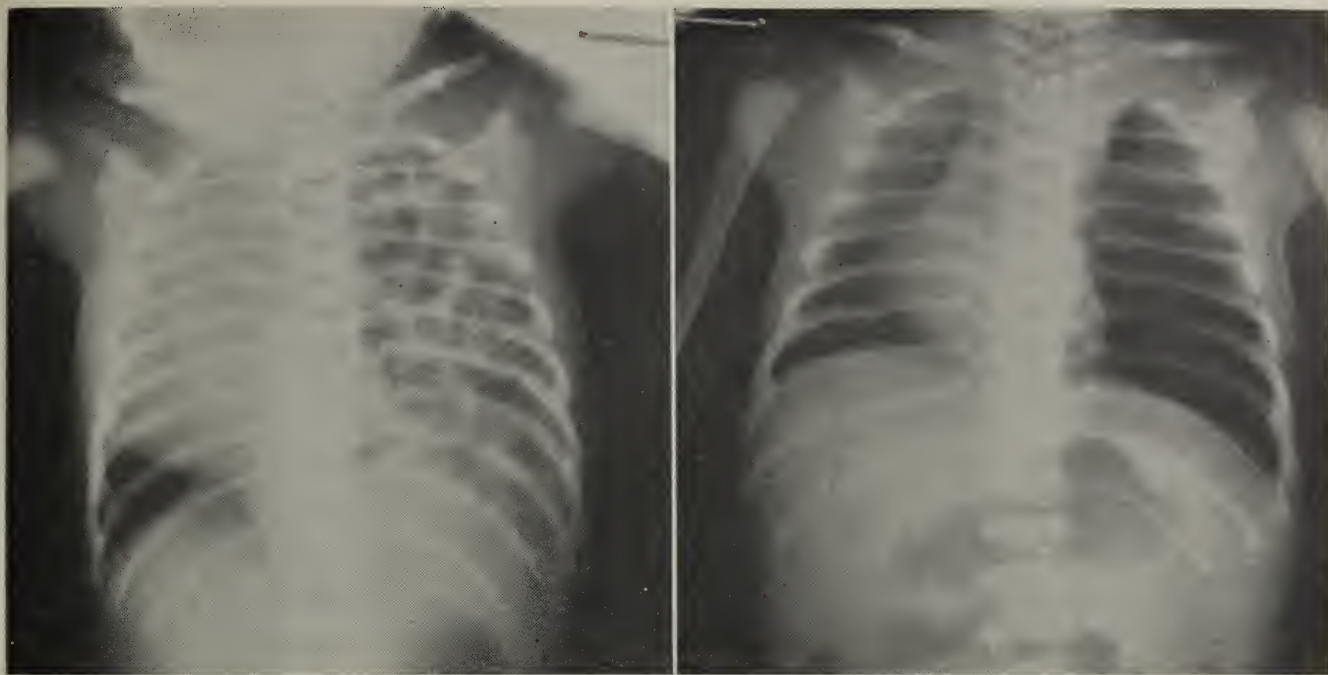


Fig. 10. Eventration of the left half of the diaphragm in a new-born. Roentgenograms showing preoperative appearance and after surgical repair.

MEDIASTINUM

Mediastinal lesions in children and infants are not common. Obviously Hodgkin's disease and lymphomas with mediastinal lymph node involvement are seen more frequently than benign mediastinal tumors but the diagnosis of lymphomas can usually be made in children by means other than thoracotomy and exploration. While benign mediastinal lesions are uncommon nearly all of those tumors which are seen in adults can occur in children. Such lesions are dermoid tumors of the anterior mediastinum, bronchogenic cysts, neurogenic tumors of the posterior nerve chain and many others. The technic of removal will depend on the location of the lesion. Anterior mediastinal tumors

sometimes can be removed by an anterior thoracotomy, sternum splitting in type, and this is particularly true in tumors of thymic origin. Those of the mid- and posterior mediastinum have to be dealt with by lateral thoracotomy on the side where the lesion is presenting.

The removal of such benign mediastinal lesions is usually not difficult, but occasionally large tumors with involvement of the bronchi or the surrounding lung parenchyma may make the operative technic and the problem of aftercare quite difficult. This is particularly true where the lesion is so large that there is shift of the mediastinal structures to one side or where there is difficulty of respiration due either to tracheal compression or ac-



Fig. 11. Diaphragmatic hernia through the left diaphragmatic leaf in a new-born infant.

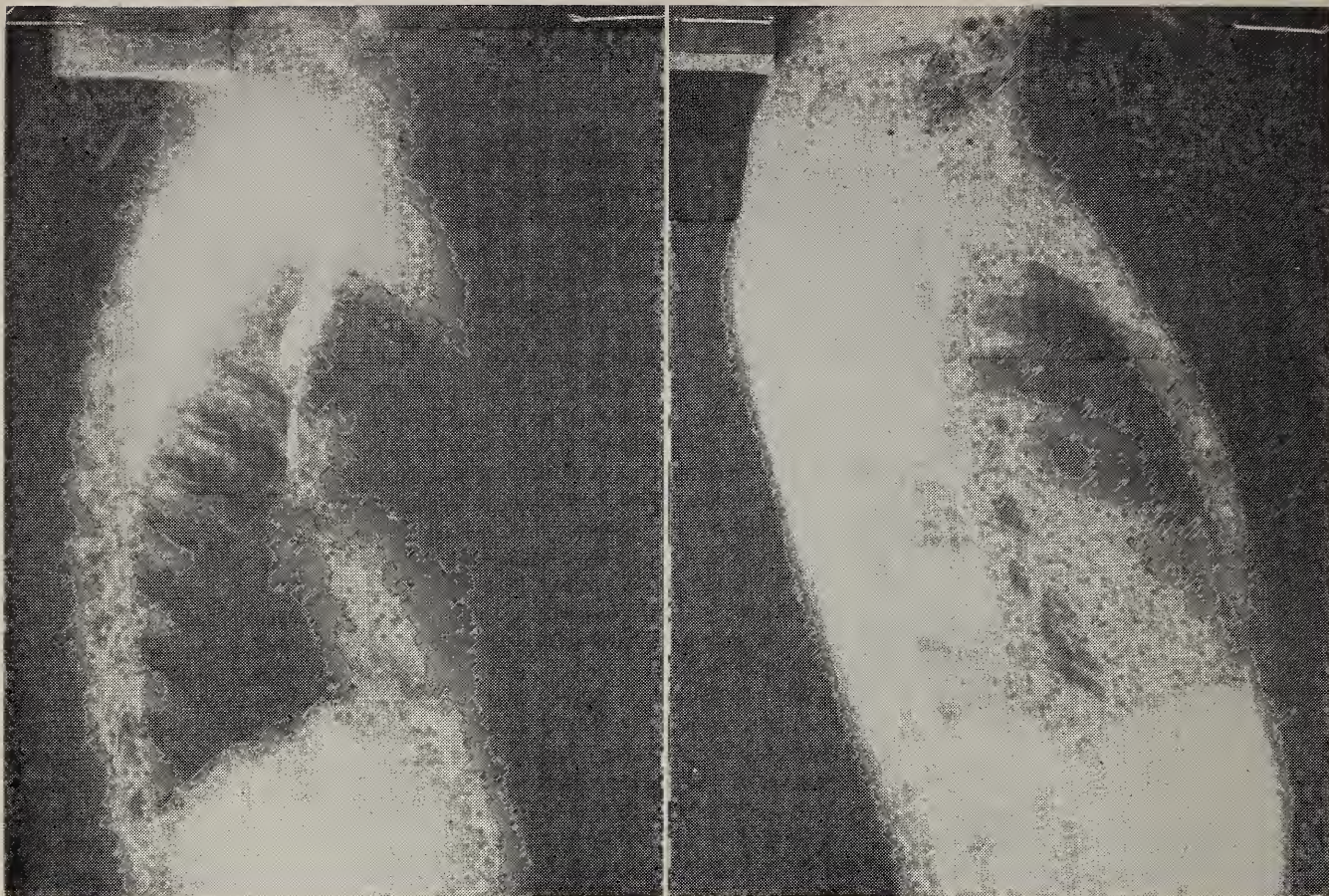


Fig. 12. Lye stricture of the esophagus. Before and after resection of the scarred esophagus and esophagogastrostomy.

tual compression of enough lung parenchyma to make adequate respiration impossible. Some of those children may even be cyanotic if they are placed in certain positions that cause increased compression on the surrounding structures by the mediastinal mass. (Figures 8, 9.)

DIAPHRAGM

The congenital defects of the diaphragm encountered are usually of two types. The first type is an eventration of the diaphragm. These patients have atrophy of one leaf of the diaphragm with complete absence of diaphragmatic musculature with the

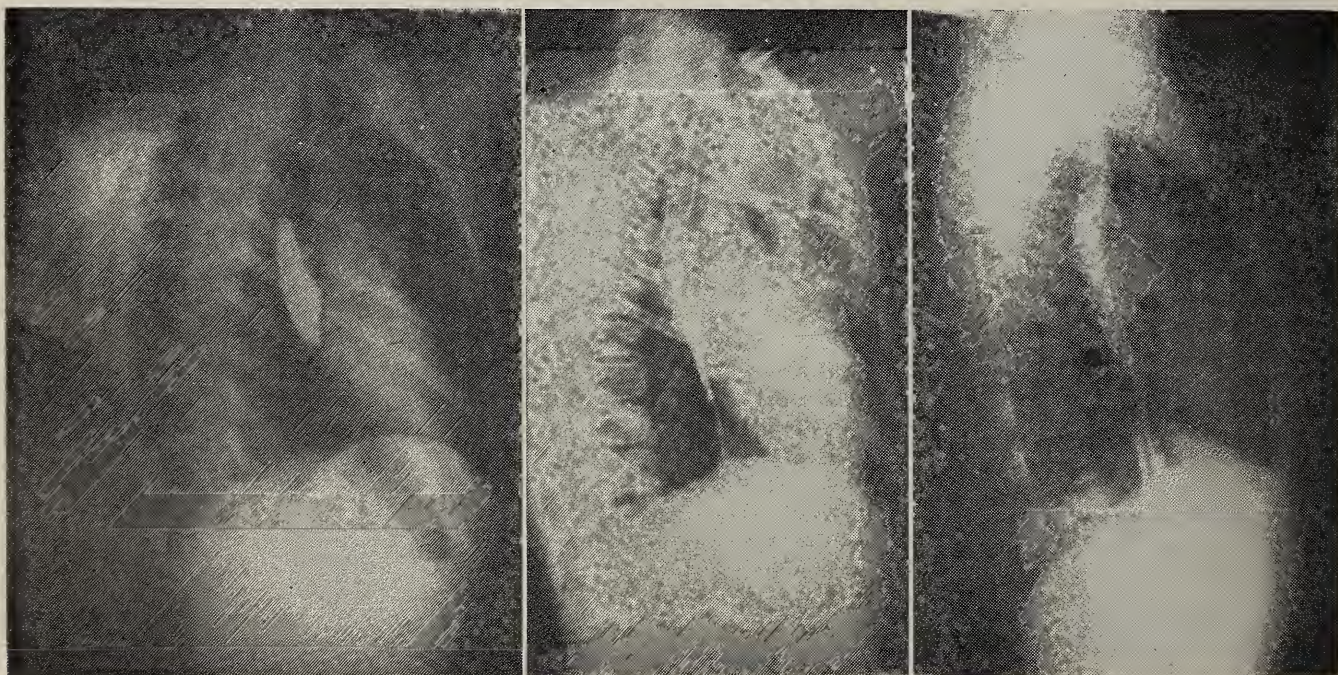


Fig. 13. Congenital stricture of lower esophagus. Roentgenogram showing complete obstruction and appearance after resection and end-to-end anastomosis of esophagus.

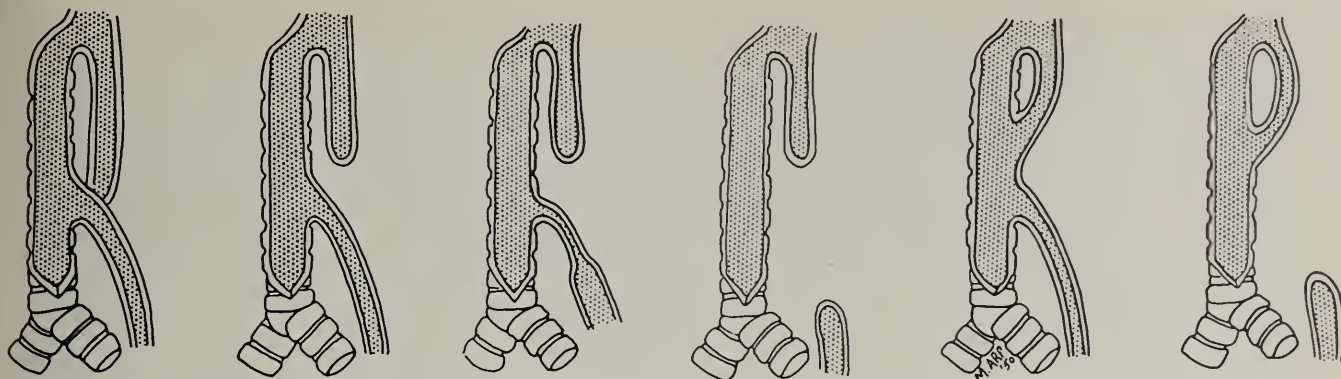


Fig. 14. Schematic drawing of variations of tracheo-esophageal fistulae with atresia of esophagus.

presence of the pleural and peritoneal layers. In such infants or children one hemithorax, usually the left, is filled by abdominal contents. (Figure 10.) Occasionally only minimal symptoms may be present but more often such children will develop respiratory difficulties and obstructive gastrointestinal symptoms. Repair is usually attempted by trying either to plicate the extremely thinned out diaphragm or actually to reconstruct the diaphragm by using fascia or muscle flaps.

The second diaphragmatic defect encountered in small infants is the so-called Bochdalek type of hernia which is due to improper muscularization of the posterior portion of the diaphragm. (Figure 11.) This area of the diaphragm will be covered by a pleuro-peritoneal layer. Herniation of intra-abdominal organs may occur. At times children, usually newborn, represent acute surgical emergencies. They show marked respiratory impairment, cyanosis and obstruction of the gastrointestinal tract at the esophageal-gastric junction or at the duodenal level. Thoracotomy in such instances is imperative and lifesaving.

LESIONS OF THE ESOPHAGUS

Accidental swallowing of corrosive liquids is not infrequent in children. The most common offender still is lye. During the process of healing the esophagus, particularly if it has had early and enthusiastic dilations, will show severe cicatrix forma-

tion up to the point where the child will be unable to swallow soft or even liquid food. For adequate esophageal dilatation a gastrostomy is necessary and a standard procedure is to submit the child to periodic retrograde esophageal dilatation with bougies until a time at which it is felt that no further scarring and stenosis will take place. However, many times, stricture formation will occur many months or even years after the initial injury leading to continued difficulty. Now in increasing numbers surgical therapy is undertaken. There are many methods devised but the one we have used most frequently is a resection of the esophagus, mobilization of the stomach and reestablishment of the continuity of the gastrointestinal tract by esophagogastrostomy. (Figure 12.) This method has given quite satisfactory results and has enabled the child to take nutrition normally and to permit adequate growth following this rather extensive operative procedure.

Occasionally in children and young adults strictures of the esophagus are seen which are secondary to the swallowing of caustic material. They may represent scarring due to peptic ulcers of the esophagus, congenital anomalies of one type or another, or may be due to other causes. (Figure 13.)

CONGENITAL ATRESIA OF THE ESOPHAGUS

Congenital atresia with or without tracheo-esophageal fistula is now a well recognized entity.



Fig. 15. Tracheo-esophageal fistula with atresia of esophagus and esophageal fistula leading into distal esophageal segment. Before and after surgical repair.

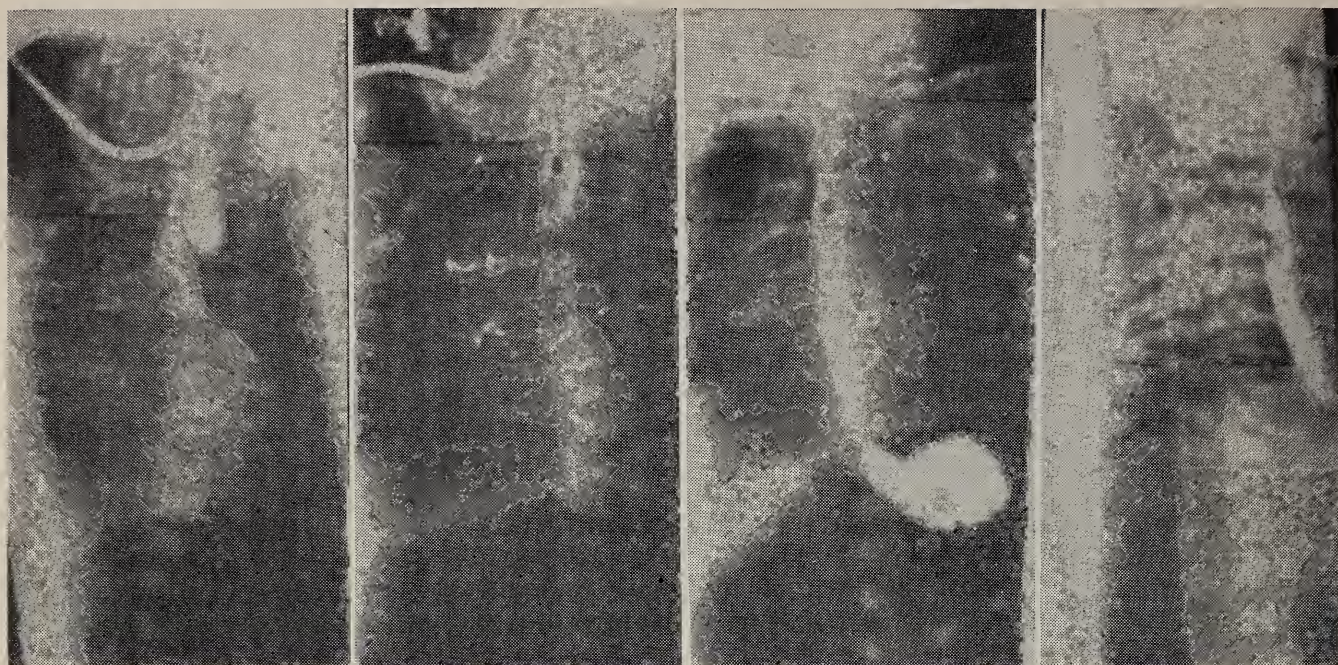


Fig. 16. Tracheo-esophageal fistulae of proximal and distal esophageal segments with accompanying atresia of the esophagus. Roentgenograms before and after surgical repair.

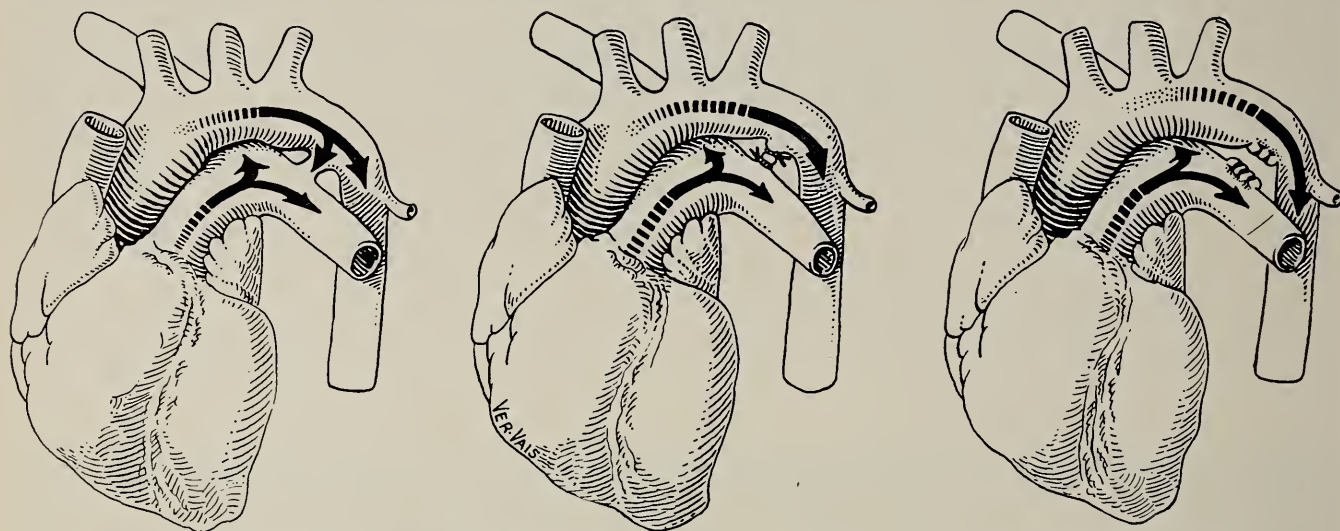


Fig. 17. Schematic drawings showing the operative procedure carried out for patent ductus arteriosus.

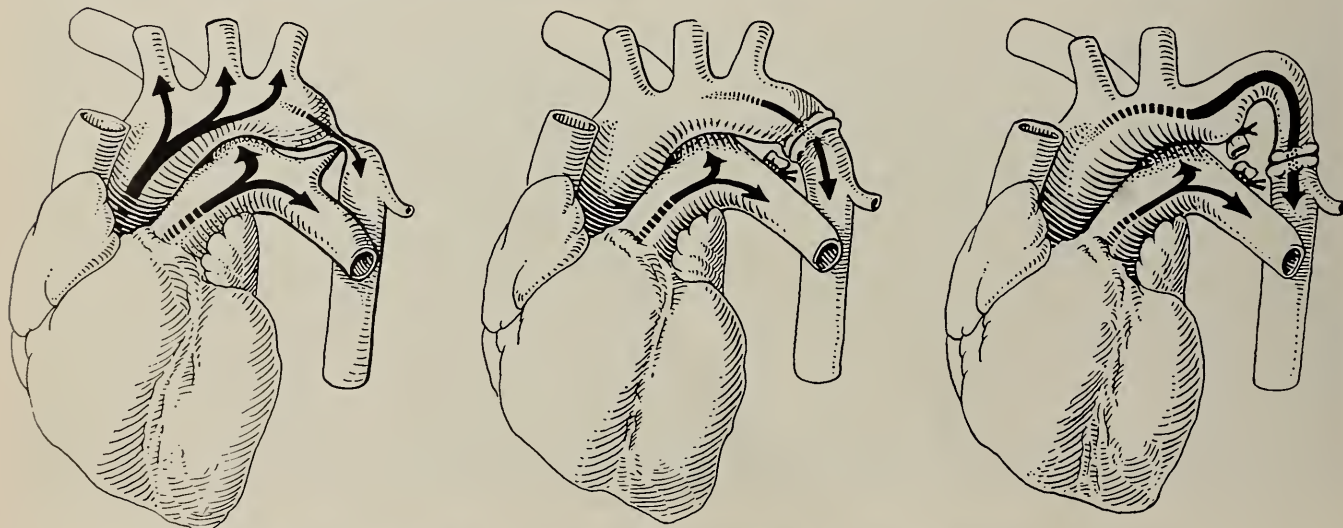


Fig. 18. Schematic drawing showing the operative procedures done for coarctation of the aorta.

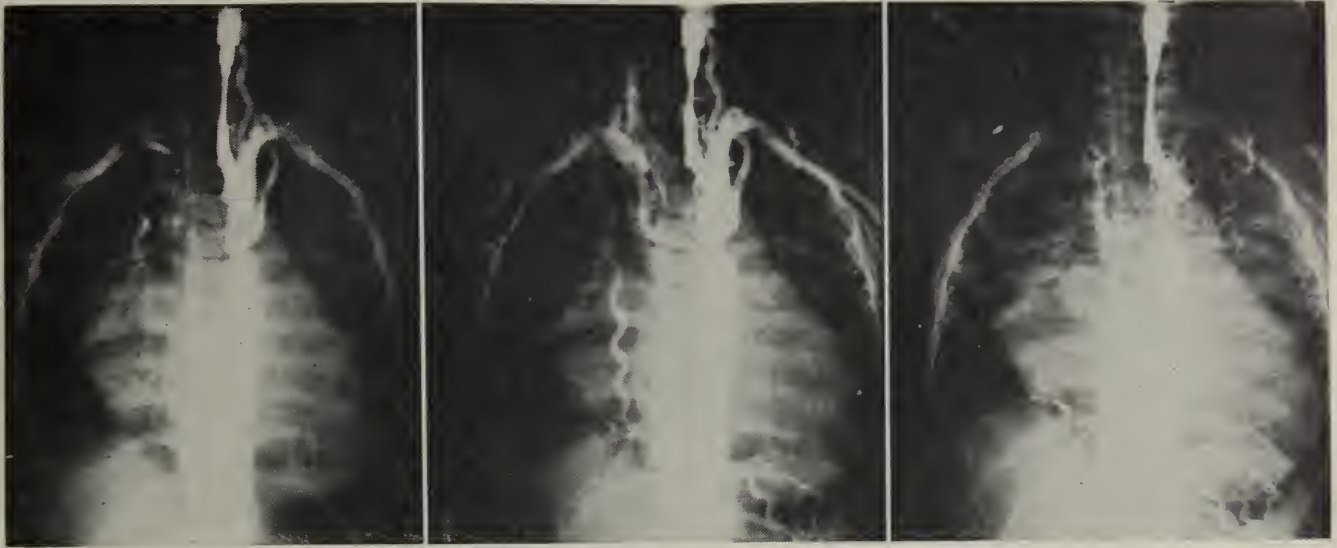


Fig. 19. Retroaortic carotid angiogram demonstrating collateral circulation and coarctation of the aorta.

The first successful operation with re-establishment of continuity of the esophagus was done in 1943 by Dr. Cameron Haight. He used the extrapleural approach on the right side closing the fistula, performing an end-to-end anastomosis between the proximal esophageal pouch and the distal esophagus. Since then numerous reports have been published with varying degrees of success. The average mortality is around 50 to 60 per cent. These newborn infants are unable to swallow their food, instead it is aspirated into the tracheobronchial tree as a result of overflow from the proximal esophageal pouch. In addition there is reflux of gastric contents into the tracheobronchial tree if a tracheoesophageal fistula exists. All variations of this de-

formity can be found. (Figure 14.) There may be only atresia of the esophagus. There may be a fistula from the proximal and distal segment of the esophagus into the tracheobronchial tree. The most common type is the one in which there is a proximal pouch only and where the distal esophagus attaches to the trachea usually in the region of the carina. (Figures 15, 16.) This type of atresia is the most favorable for surgical treatment. The diagnosis of this type of lesion can be easily made if kept in mind in the child who regurgitates recently-swallowed food and in which there is no evidence of gastric secretion in the regurgitated material. One should never use barium to verify the diagnosis roentgenologically in such instances; instead lipiodol should be used in all circumstances.



Fig. 20a. Appearance of coarctation of the aorta at the time of surgery.



Fig. 20b. Following resection and end-to-end anastomosis of aorta.

LESIONS OF THE HEART AND GREAT VESSELS

The field of cardiac and large vessel surgery for congenital anomalies has made tremendous strides during the last ten years. Infants and children who previously were only medical curiosities can now

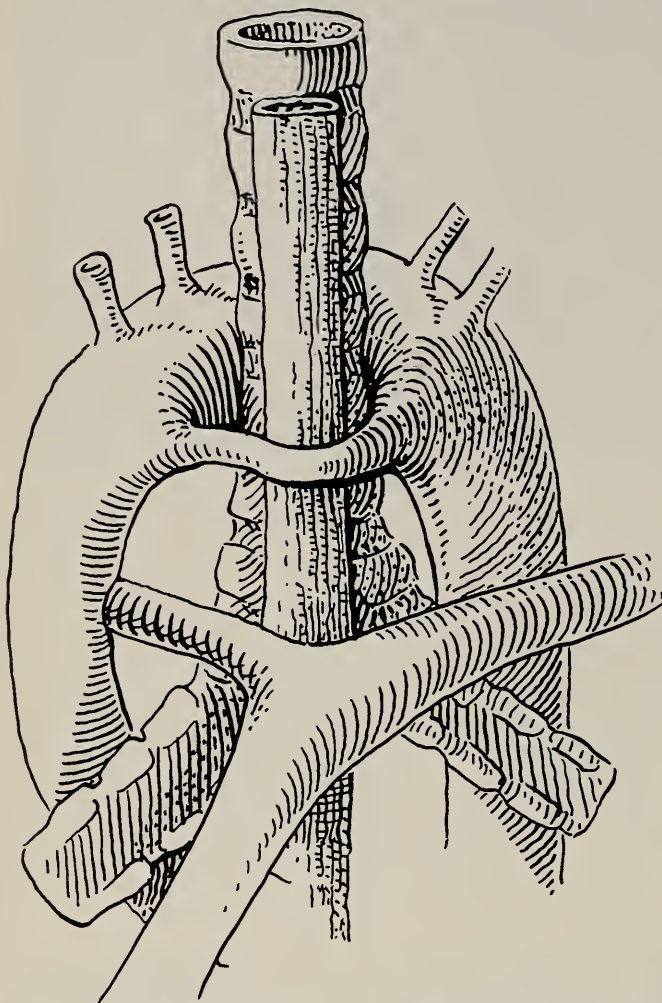


Fig. 21. Schematic drawing of a congenital aortic ring encircling trachea and esophagus.

be treated successfully. Their congenital defects can either be completely remedied or at least good palliation and relief of some of the most disturbing symptoms caused by their congenital cardiac anomalies may be achieved. Up to the present time the surgery done for congenital cardiac disease is actually only large vessel surgery of either the pulmonary arteries or the large systemic vessels. True intracardiac surgery with repair of intracardiac defects has not come into its own as yet but there are many promising investigations being carried on at the present time which offer hope. Essentially these patients can be divided into two large groups, those with cyanosis and those without cyanosis. The acyanotic group is composed of those patients with patent ductus arteriosus, coarctation of the aorta, congenital vascular rings of the aorta and the few other less common conditions, while the cyanotic group consists chiefly of those lesions associated with stenosis of the pulmonary artery.

PATENT DUCTUS ARTERIOSUS

This structure is necessary for normal function of the fetal circulation, transmitting pulmonary arterial blood to the aorta during fetal life. Soon after birth the ductus closes. The reason and mechanism for its closing have never been well explained. Usually most patent ducti are completely closed by the time the baby is eight weeks old. At the end of one year about one per cent of ducti may still be partly patent and thereafter a certain percentage never close. It is estimated at the present time that 20,000 persons in the United States have this congenital anomaly.

In patients with a persistent patent ductus arteriosus there is a considerable amount of recirculation of systemic arterial blood back through the left auricle and ventricle. At such times it is estimated that 45 to 75 per cent of all the blood pumped into the aorta by the left ventricle is recirculated by the way of the patent ductus causing an unequal cardiac output between the right and left ventricle. The left ventricle expels two to four times the amount of blood expelled by the right. The most typical physical finding is a continuous systolic and diastolic murmur in the second interspace in the left parasternal line, large pulse pressure, low diastolic pressures and all the other peripheral findings of aortic insufficiency. On cardiac fluoroscopy engorged pulmonary arteries can be seen which often show marked pulsations.



Fig. 22. Preoperative appearance of a 13 year old boy with severe pulmonary artery stenosis and tetralogy of Fallot.

It can be stated that the average life expectancy of a patient with a patent ductus arteriosus is about 35 years of age. About 30 per cent of the patients will develop bacterial endarteritis and about 50 per cent will die due to acute or chronic cardiac failure. This all can be obviated by timely closure of the patent ductus surgically. (Figure 17.) The ideal time for this procedure is soon after the age of two years. Then one is reasonably certain that the patent ductus will not close spontaneously and permanent damage to the heart and vessels usual-



Fig. 23. Tetralogy of Fallot. Intravenous angiocardigram showing a right descending aorta and simultaneous filling with Diodrast of the aorta and pulmonary artery.

ly has not occurred. Furthermore in the older patients the sclerosis of the ductus may be severe and thus the hazard of closure increased.

COARCTATION OF THE AORTA

The symptoms in patients with coarctation of the aorta are due to severe hypertension in the vascular channels arising proximal to the area of aortic obstruction. All of the symptoms are typical of those of hypertension as, for instance, headache, cerebral vascular episodes or evidence of cardiac failure secondary to the hypertension. Many of the cases of coarctation of the aorta are not diagnosed as long as these symptoms are minimal or the hypertension is asymptomatic or well tolerated. The average life expectancy of a patient with a definite coarctation of the aorta is about 30 years of age. The presence of such hypertension has been de-

scribed in infants only a few weeks old and we ourselves have picked up cases of coarctation in babies three months of age.

The diagnosis in children is easily made if one finds cardiac enlargement, hypertension of the upper extremities and absence of femoral pulsations or other pulsations in the lower extremities. The collateral circulation in small children is not pronounced. It usually becomes apparent at the age of six to eight years and at that age on occasion the typical notching of the ribs due to the marked enlargement of the collateral intercostal vessels can be seen. The surgical correction for coarctation of the aorta has become standardized. There are two possible procedures that can be carried out, either an anastomosis of the subclavian artery to the distal aorta with or without resection of the coarcted area or resection of the coarcted area and the per-

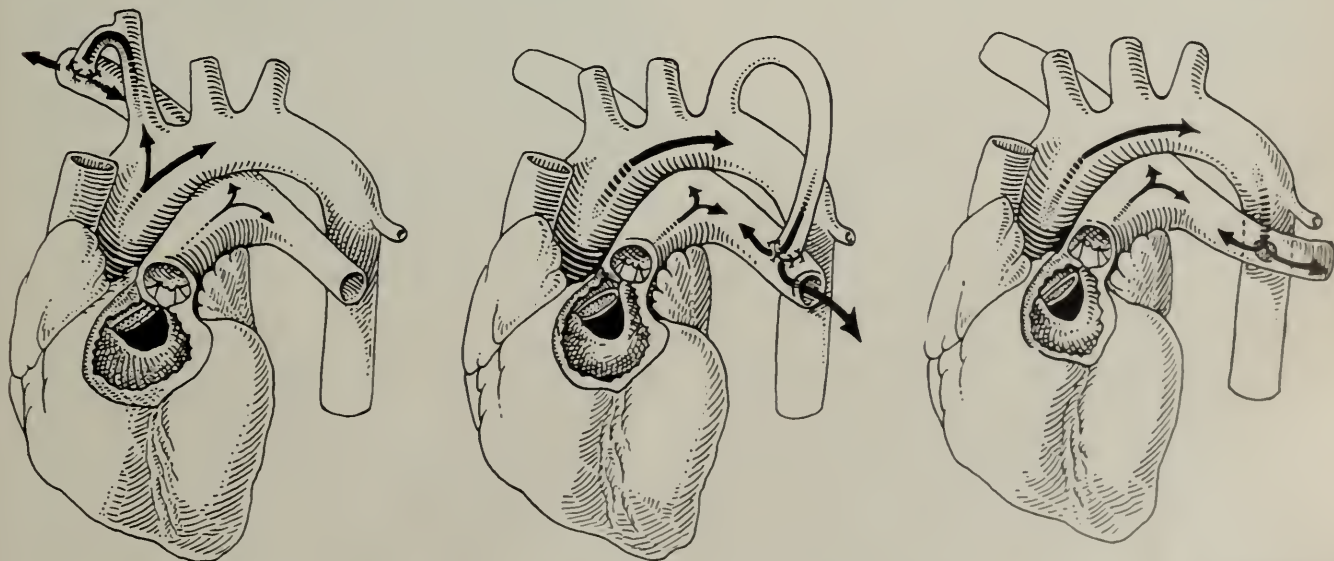


Fig. 24. Schematic drawing of operative procedures carried out for patients with pulmonic stenosis and tetralogy of Fallot.

formance of an end-to-end anastomosis of the proximal and distal aortic segments. (Figures 18, 19, 20.)

CONGENITAL AORTIC RINGS

This is a rare condition in which the anterior and posterior aortic arches persist. The trachea and

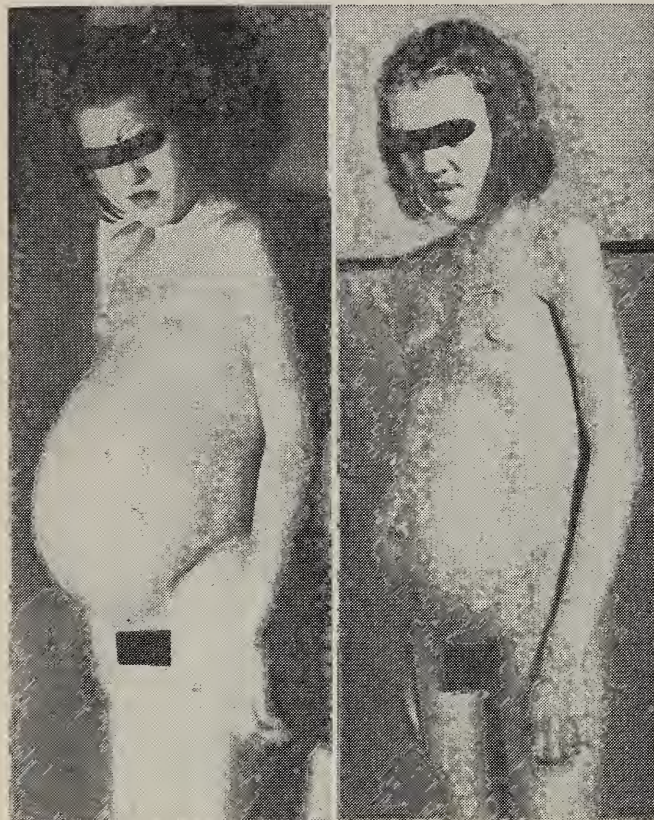


Fig. 25. Preoperative and postoperative appearance of a patient with constrictive pericarditis.

esophagus are surrounded by a vascular ring. This vascular ring will give tracheal and esophageal obstruction in children and infants with repeated episodes of pulmonary infection, difficulty in swallowing, stridor and intermittent episodes of cyanosis. The surgical correction for this condition is the severance of either the anterior or posterior arch. (Figure 21.)

PULMONIC STENOSIS

In the cyanotic group of congenital heart disease all variations of congenital cardiac deformities can be observed. However, the surgical treatment and alleviation of symptoms is only possible if there is definite pulmonic stenosis present. In this group of patients it is not so difficult to carry out the surgical procedure but it is extremely difficult to make the proper diagnosis anatomically and physiologically. The most common type of pulmonic stenosis exists as the so-called tetralogy of Fallot. (Figure 22.) It represents a congenital cardiac defect in which there is dextraposition of the aorta, pulmonic stenosis, right ventricular hypertrophy and the presence of an interventricular septal defect. The presence of pulmonic stenosis makes an adequate pulmonic arterial flow impossible and results

in low oxygen saturation values in the arterial systemic blood. This is made worse by admixture of mixed venous blood being pumped into the aorta from the right side of the heart. (Figure 23.)

The only improvement surgical intervention can offer is to increase the flow of blood through the pulmonary arteries. This can be done either by anastomosing the pulmonary artery to one of the peripheral systemic vessels such as the subclavian or innominate artery or by an anastomosis between the pulmonary artery and the descending aorta. (Figure 24.) In this way systemic arterial blood which is desaturated is made to flow through the pulmonary arterial tree and re-oxygenated.

Remarkable results can be obtained even in severely cyanotic, incapacitated children. As to the prolongation of life in this group of patients not much can be stated as yet. The average life expectancy in severe cyanotic heart disease is somewhere between 13 and 15 years of age. It certainly can be stated that children who were completely incapacitated, bedridden and who showed no exercise tolerance preoperatively can be improved to an extent where they can be up and about with either no or minimal cyanosis on exercise.

There is occasionally encountered another type of heart disease amenable to surgical care, namely, *constrictive pericarditis*. This is rarely seen in children; if seen it is usually on a rheumatic or tuberculous basis. The constrictive pericarditis is the result of an inflammatory process within the pericardial sac resulting in severe scarring of the pericardial layers and organization of the pericardial



Fig. 26. Photograph taken in operating room in a case of constrictive pericarditis showing the removal of the scarred and thickened pericardial layers.

exudate. In so doing the pericardial sac constricts around the heart reducing the cardiac output and causing venous stasis of the right side of the heart. Such patients will often develop a large liver, ascites, increased venous pressures, decreased exercise tolerance and low peripheral systemic blood pressure. (Figure 25.) Chronic cardiac disease finally leads to death unless surgical intervention is possible. The surgical procedure attempts to re-

move the scarred pericardium and the organizing exudate. (Figure 26.) This frees the normal cardiac musculature and restores normal cardiac action.

STATE UNIVERSITY OF IOWA
COLLEGE OF MEDICINE

CLINICOPATHOLOGIC CONFERENCE

January 3, 1951

SUMMARY OF CLINICAL RECORD

A 64 YEAR OLD white male stated that he began tiring easily ten months prior to admission to the University Hospitals. This symptom gradually progressed in severity and was accompanied by insomnia. Two months before admission the patient noticed blurring of vision, more severe on the right, and weakness of the left arm and leg. He experienced a "tired feeling" around the right eye and a slight amount of headache. Although he considered his vision good, he changed eyeglasses. The weakness of the left extremities progressed to a severe degree unaccompanied by stiffness or pain. The patient did not believe there had been any loss of sensation. Memory had been poor during the previous eight to ten months, but the patient had been able to work full time until two weeks before admission.

The patient's wife stated that four years before admission he experienced several dizzy spells, unaccompanied by headache, nausea or vomiting or unconsciousness. These episodes extended over a period of several months after which they disappeared. About one year prior to admission the patient became emotionally depressed, refused to talk and lost interest in normal activities and in the future. He looked glum and began to tire readily. Two months before entrance he slipped and fell, striking the back of his head. He was not rendered unconscious and was able to work the remainder of the day. The next morning the neck was stiff, but this disappeared by the following day. Shortly after this, however, his memory began failing and he fabricated in order to fill gaps of memory. He was easily confused. He had not been able to work during the previous one and one-half months because of fatigue, confusion and memory loss. He had lost 12 pounds in weight during the previous year.

The patient had been a hospital administrator. He used little alcohol and smoked three cigars daily. He had suffered the usual childhood diseases and had an appendectomy at the age of 20. There had been no other significant illnesses or injuries.

On physical examination the patient was well developed and well nourished. He stated that he had no pain, but "did not feel extra good." He was not familiar with recent newspaper headlines. He stated that he enjoyed playing bridge and gave appropriate answers to questions concerning bidding. The optic fundi were normal; a complete left homonymous hemianopsia was present on con-

frontation testing; there was 1-plus ptosis on the right lid and a 1-plus droop over the left buccal angle. The chest was normal to percussion and auscultation. The pulse rate was 68 per minute; blood pressure 100/60; the heart sounds were normal and no murmurs were audible. The abdomen displayed an appendectomy scar and no organs or masses were palpable. A severe paresis of the left upper extremity was present with grips 100/20 and alternate motion rate 100/0. Moderate paresis of the left lower extremity was found with kicks 100/80; alternate motion rate 100/100; Kernig's 120/130 and tone 100/100. The deep reflexes were diminished in the left extremity and the Babinski reflex was positive on the left. There was diminution of cotton-wool, pinprick and vibration sensibilities over the left extremities, estimated at 10 to 15 per cent of normal in the left upper and 50 per cent in the left lower. These sensibilities were estimated as 75 per cent of normal in the left half of the face. There was marked disturbance of position sense of the left toes and fingers. Routine urinalysis was entirely normal and the blood hemoglobin level, red and white blood cell counts and the peripheral blood smear were within normal limits. The Wasserman reaction was negative. Roentgenograms of the skull and chest were interpreted as normal. Lumbar puncture revealed clear fluid under initial pressure of 110 mm. of water with normal dynamics. Globulin and abnormal cells were absent. The total protein was 60 mg. per cent.

Electroencephalography showed generalized 7½ per second activity in all areas with some high-voltage bursts in the right frontoparietal region which might have been regarded as focal. These were not at the frequencies usually associated with expanding masses involving the cortex. Their subcortical origin was suggested.

Ventriculograms demonstrated a large filling defect in the body of the right lateral ventricle indicative of a space-occupying lesion in this area. The ventricular fluid was at first clear, but toward the end of gaseous (air) replacement, the fluid became milky. This was interpreted as indicating a cystic neoplasm near the ependymal wall of the ventricle which had ruptured into the ventricle as a result of the changing hydrodynamics during ventriculography. A right frontoparietotemporal craniotomy was performed and a neoplasm which appeared to be contained within the right lateral ventricle and to arise from choroid plexus was encountered. The tumor appeared to invade the region of the thalamus. It was subtotally removed.

Post-operatively the patient remained drowsy and did not speak. His only verbalization was in the form of grunting responses. He remained hemiparetic on the left, although he moved the right limbs with fair vigor. Coma gradually deepened and a moderately febrile state developed. On the fourth day following surgery, a Levin tube was passed into the stomach for feedings. The following day Wangenstein suction was applied to the

Levin tube because coffee ground material extruded from the tube. His course was rapidly downhill, and he died on the eighth post-operative day.

Abstracted by Gordon L. Smiley, M.D.

NECROPSY FINDINGS

There was evidence of the recent operation in the right temporoparietal region of the scalp and skull. The lesion of principal interest, however,

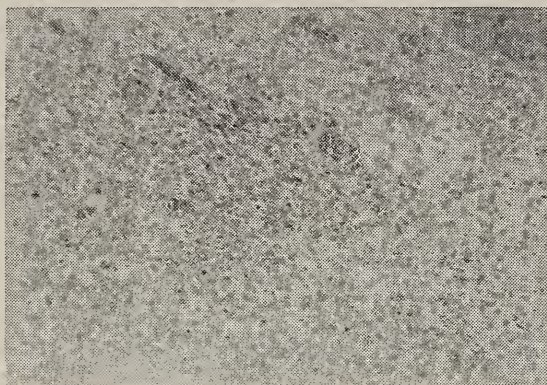


FIGURE 1. Brain showing metastatic carcinoma.

was a neoplastic mass, 2.5 cm. in diameter, arising in the wall of a small terminal bronchus in the apex of the left lung. This was made up of anaplastic, undifferentiated cells which were identical in type with those in the brain lesion at operation (S-47-597). Many other metastatic neoplastic nodules were found in various other locations in the brain, including left hippocampal gyrus, right superior parietal lobe, right thalamus, tegmental area of midbrain and medial portion of left temporal lobe. The latter had invaded the tentorium cerebelli. No other metastases were found.

The lungs were involved by severe lobular pneumonia which had become confluent in both upper lobes with necrosis and abscess formation in both lobes. Hemolytic *Staphylococcus Aureus* was cultured from the pus in these abscesses.

NECROPSY DIAGNOSIS

Undifferentiated carcinoma of terminal bronchus, apical portion, left lung, with widespread cerebral metastases to left hippocampal gyrus, right superior parietal lobe, right portion of thalamus, tegmental area of midbrain, medial portion of left temporal lobe and left tentorium cerebelli.

Post-operative craniotomy, recent, right temporo-parietal area.

Tracheobronchitis, acute, purulent.

Confluent, lobular pneumonia, necrotizing, of right and left upper lobes with abscesses, recent, of right and left upper lobes, due to hemolytic *staphylococcus aureus*.

Lobular pneumonia, left lower lobe.

Pulmonary congestion and edema, lower lobes.

Lymphadenitis, subacute, mediastinal.

Generalized arteriosclerosis, mild.

Pleural adhesions, old, left.

CLINICAL DISCUSSION

Dr. Edward C. Clark, Neurology: This patient was a 64 year old white male. About one year before admission here, his wife noticed that he had become depressed and tired easily. This continued until about two months before entering this hospital when the patient fell, for reasons unknown, and struck the back of his head. At about this time it was noticed that there was some weakness of his left arm and leg. His wife also realized that he was having some difficulty with his memory and that he would fabricate in order to fill up these gaps. He continued downhill, his left hemiparesis became worse, he lost 12 pounds of weight over the year's period of time and was forced to give up his job about one and one-half months before coming here.

The physical examination and laboratory findings are in the protocol. Ventriculograms demonstrated a large filling defect in the body of the right lateral ventricle, indicative of a space-occupying lesion in this area. The ventricular fluid was clear at first, but towards the end of the air replacement, it became milky. This was interpreted as indicating a cystic neoplasm near the ependymal lining of the ventricle which had ruptured into the ventricular cavity.

A right fronto-parieto-temporal craniotomy was performed and a neoplasm was encountered which appeared to be contained within the right lateral ventricle and to arise from the choroid plexus. The tumor tissue seemed to invade the region of the thalamus. Consequently the neoplasm was substantially removed. Post-operatively the patient's course was downhill and he died on the eighth post-operative day.

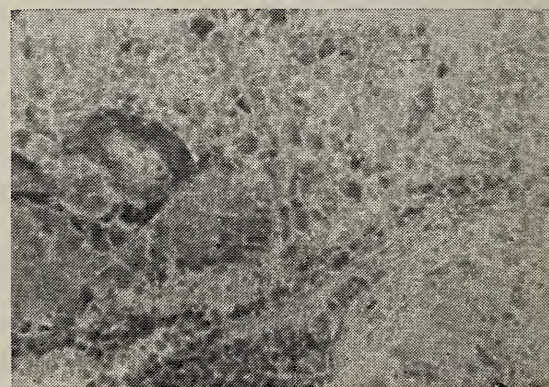


FIGURE 2. Bronchus with anaplastic carcinoma.

The x-ray department will now discuss the x-rays.

Dr. Stephen A. Forbes, Radiology: The patient had a plain film of the chest taken on admission which was read as showing no abnormalities. The right lung field showed no evidence of abnormal infiltrate. In the left lung field, however, a definite infiltrate was seen in the left subclavicular area which was not considered an abnormality when the film was interpreted three years ago. Had the

film been read today in the light of our present concept of bronchogenic carcinoma, this area would certainly be viewed with suspicion. The remainder of the left lung field was clear. The heart was entirely normal in size and contour, and the thoracic cage showed no bony abnormalities.

The patient had plain skull films showing no displacement of the physiological calcifications. Ventriculographic study that same day showed no filling of the third and fourth ventricles. There was some apparent downward displacement of the right lateral ventricle, and in the lateral view there was incomplete filling and posterior displacement of the right lateral ventricle. This was interpreted as being due to the presence of a lesion occupying the right cerebral hemisphere.

Dr. Clark: I would now like to have Mr. Joynt give the student's opinions.

Mr. Robert J. Joynt, Student: The majority of the class was split on the definitive diagnosis, 13 voting for meningioma and 14 for astrocytoma. Also, nine voted for apendymoma, six for choroid plexus papilloma. The cause of death was believed to be increased cranial pressure post-operatively, the majority feeling it due to post-operative edema and ten thought it was due to hemorrhage. Bleeding gastric ulcers, respiratory failure, infection, gradual depression of vegetative functions and paralytic ileus were also mentioned.

Dr. Clark: Dr. Meyers, would you like to discuss the operation?

Dr. Russell Meyers, Neurosurgery: The ventriculograms have been demonstrated and show the presence of a space-encroaching lesion in the right parietal area. A bone flap was accordingly reflected and a tumor was encountered deep in the edematous hemisphere. It was fairly firm and relatively avascular. When its presenting half was outlined, we discovered ourselves in the right lateral ventricle. On further dissection the tumor appeared to take origin from the choroid plexus. The choroid plexus was ligated on each side and lifted free. At this time it became apparent that the tumor was not confined to the lateral ventricle, but was invading the right half of the thalamus. This region is a surgical *noli me tangere* and, after removal of all accessible tumor, the flap was closed.

Dr. William B. Bean, Medicine: How does the change in the spinal fluid on ventriculography fit in with what was found at operation? It was suspected that it was a cystic thing which let go some milky fluid. Is that sufficiently diagnostic so that you have assurance that the fluid came from such a tumor?

Dr. Meyers: When the fluid is clear at the onset and becomes cloudy after removal of 10 or 12 cc, we assume the cloudiness represents a new addition from a cystic lesion bordering on the ependyma. That ordinarily bespeaks a tumor with a fragile membrane which breaks when the hydrodynamics of the ventricular fluid are disturbed. I

do not know of any other interpretation that could be made.

Dr. Bean: Dr. Boyd, do you conceive that this thing might have gotten to the brain in a primary metastasis and then remigrated or extended to involve all three areas?

Dr. Eugene J. Boyd, Pathology: I do not know any other way of explaining it. It seemed more likely that it probably spread from the original focus to the brain, but I do not know of any way

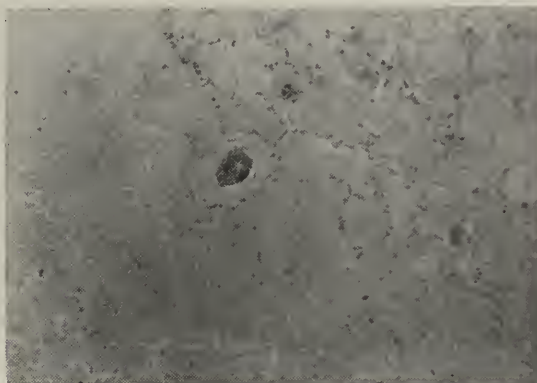


FIGURE 3. Lung: Necrotizing pneumonia with abscess formation.

of knowing now. It seems strange to me that a neoplasm as anaplastic as this, in a place as vascular as lung, should not metastasize elsewhere. We did not examine every bone, of course, but the x-ray people obtained films of the common sites. We did examine the adrenals and liver and the rest of the lungs.

Dr. Johann L. Ehrenhaft, Surgery: I did not understand the cause of death, why the lung abscesses?

Dr. Boyd: I do not know why he had them.

Dr. Ehrenhaft: Were the abscesses in the region of the neoplasm in the bronchials?

Dr. Boyd: No, they were in the other lobe, as a matter of fact, in both sides, miliary abscesses all through. We cultured a number of them, including the largest one. I suspect aspiration is the most likely mode of entrance.

Dr. Clark: One of the most common sources of metastatic carcinoma of the brain, of course, is the lungs. It is said that from 16 to 36 per cent of all lung carcinomas have spread to the brain at post mortem. This is, of course, a fair number. In a study of 448 cases of all types of bronchogenic carcinoma, the average duration of life after the onset of symptoms was 14 and one-half months. If there were cerebral metastasis, however, the life expectancy was reduced to six months. Of 27 cases of carcinoma of the lung with cerebral seeding of the tumor, the brain was found to contain only one metastatic nodule in seven cases at post mortem, and more than a single tumor in the remainder of the patients.

This brings up the problem I want to inject into the discussion here. Should these patients with intracranial metastasis from carcinoma of the lung

be considered as possible candidates for craniotomy? As a general rule, we have looked upon operative intervention as undesirable and, when such an occasion arises, we are likely to say that the patient is inoperable. However, a fair number of such cases have single intracranial tumors which definitely reduce their life expectancy. I should think that in carefully selected cases the results of removal of such metastatic lesions might be more desirable.

I have in mind a particular case I took care of in Detroit. He was completely incapacitated by a bronchiogenic metastasis in one occipital pole. He was operated and the occipital pole and tumor resected, as well as the original lesion in the lung (the latter being done at a later date). He was able to return to his work for the next year, at which time he developed another tumor in the frontal region. This was removed, and I do not know what has happened since. However, the immediate results were satisfying and he was able to work for an extra year.

Dr. Ehrenhaft: We encounter the problem of cerebral metastasis following carcinoma of the lung and the treatment of it about five to six times a year. We recently had a man who from the x-ray appearance certainly had a resectable neoplasm of the lung and who first came to the Department of Neurology with neurologic symptoms. Ventriculograms carried out on this patient showed that the metastases in the brain were multiple and for this reason this man was obviously not a candidate for craniotomy and pneumonectomy. Recently I have had a chance to talk to a friend of mine in St. Louis who, in connection with one of the neurosurgeons, now has three patients upon whom craniotomies for metastatic brain lesions were carried out and who also had resections of the lungs involved by carcinoma. One of those patients is alive now for two and one-half years and in fairly good state of health. I think this is a worthwhile procedure in a few selected cases.

I would like to bring out a few things about carcinoma of the lung and symptoms of carcinoma of the lung. As I have mentioned many times before to the students, physical examination for early detection of carcinoma of the lung, for all practical purposes, is worthless. By the time auscultation and percussion will reveal definite abnormalities, the patient in all probability has passed what we could classify as the stage of an early neoplasm. If routine chest x-rays are taken on patients, the chances that one misses an early neoplastic lesion of the lung are rather small. There are a few areas in the lung parenchyma where small shadows may be hidden as, for instance, behind the cardiac shadow or behind sternum or ribs, but taking different views may obviate this difficulty. I should think that on routine x-ray examinations around 98 or 99 per cent of all early lesions of the lung can be detected. This does not mean that all of those early lesions are operable or curable;

but by the time physical signs develop, the chances for resectability and curability certainly drop precipitously.

The spread of carcinoma of the lung is interesting. Obviously there are two channels available—lymphatic and blood channels. The lymphatic spread in carcinoma of the lung is the one to the regional hilar lymph nodes and is the one which is usually observed during the time of surgery in the form of lymphatic metastasis to the regional nodes. This spread is much earlier and much more common in peripherally located lesions in the lung. Distant metastasis must obviously be through the blood stream and the brain is one organ frequently involved and has been mentioned in different statistics to be involved between 20 and 30 per cent of all cases. The most common organ involved is the adrenal; this is between 35 and 45 per cent at the time of autopsy. Bone is involved in around 20 to 25 per cent and liver frequently. Another interesting fact is that hard muscle will be involved in about 10 per cent of cases at the time autopsies are carried out. As far as life expectancy is concerned in the peripheral type of carcinoma of the lung, it is about seven months from the onset of symptoms to the time of death. The average survival of centrally located carcinomas is between 26 and 27 months. The peripheral type of carcinoma is insidious in onset and gives few symptoms.

One should never wait and observe lesions on the chest. The old attitude of "time will cure chest lesions" certainly has been proven wrong. I would state that in those instances, time is not a healer, but time actually becomes an executioner. The slightest changes in an x-ray film should always make one investigate the patient thoroughly and many times the whole gamut of diagnostic procedure as, for instance, bronchoscopies, bronchograms, sputa examinations, different x-ray views, inspiratory and expiratory chest x-rays and other procedures become necessary before a diagnosis can be established. Still there will be a certain percentage of patients upon whom a definite diagnosis cannot be established and who will have to undergo an exploratory thoracotomy to rule in or out a neoplasm of the lung.

Dr. Bean: You say time is the executioner. What is time?

Dr. Ehrenhaft: I would measure it in days and not in weeks. An adequate thorough preoperative workup is always necessary, and if one does not arrive at a definite conclusion, exploratory thoracotomy should be carried out.

Dr. Adolph L. Sahs, Neurology: I should like to make a few comments regarding this problem. Approximately 15 years ago the policy of performing routine x-ray films of the chest was adopted in those situations in which brain tumor was suspected. Occasionally we are surprised to find that metastases have arisen from a lung tumor even

(Continued on page 160)

The JOURNAL of the Iowa State Medical Society

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Vol. XLI APRIL, 1951 No. 4

University of Iowa Issue

As is the annual custom, the current issue of the JOURNAL has been prepared by members of the faculty of the College of Medicine of the State University of Iowa. Two new members of the faculty are being introduced to the physicians of Iowa: Dr. Alson E. Braley, professor of the Department of Ophthalmology and Dr. Carroll B. Larson, professor of the Department of Orthopedic Surgery. We welcome these new professors in behalf of the Iowa State Medical Society and look forward to many years of pleasant associations.

The Committee in charge of this issue has presented a symposium on convulsive orders, with another paper dealing with surgical problems of childhood. These papers represent the high standards which have always been maintained at our medical school.

It is fitting that the Executive Committee again be congratulated for the splendid work carried out during the absence of a regularly appointed dean. By increasing the number of medical students from 90 to 120, the Committee has done much to allay criticism of enrollment in medical schools generally. The Committee has also made provision for six residencies in general practice with the possibility of expansion to 20 such residencies in 1952. By affording this type of training, the young physician starting practice in Iowa will be much better fitted for the private practice of his art.

The JOURNAL takes this opportunity of thanking the Committee which prepared this issue: Dr. Julian D. Boyd served as chairman and the members of his Committee included Robert M. Feather-

stone and Drs. Johann L. Ehrenhaft and Eugene W. Scheldrup.

Come to the Annual Meeting

All members of the State Society are again personally invited to be present at the new auditorium in Sioux City April 23, 24 and 25. Now is the time to write a letter for hotel reservations.

The splendid program which has been prepared was presented in the March issue of the JOURNAL. In addition to this program, special events have been arranged by our hosts. As is customary, the golfers will take part in a tournament at 10 a. m. Sunday, April 22 at the Sioux City Country Club. On April 23 the Woodbury County Medical Society will entertain at the Sioux City Club in the Warrior Hotel. On April 24, preceding the Annual Banquet at the Hotel Martin, the Physicians and Hospitals Supply Company of Minneapolis will be hosts at a social hour.

The scientific exhibits promise to be even better than anything provided in the past. Our commercial exhibitors will again be present to welcome all members. Arrangements have been made for the showing of scientific movies.

It would appear that the 1951 meeting may well prove the best session in our history. This cannot transpire unless each member of the Society makes a special effort to attend.

American Medical Education Foundation

There is probably no physician in Iowa who has not heard, directly or indirectly, criticism of the advertising campaign carried out by the American Medical Association. Peculiarly, similar advertising which followed the doctors' campaign, sponsored by the CIO, aroused much less comment although dealing with the same problem. Much of this criticism indicated that greater benefit would have accrued for the public had the funds expended been set up for use in research or other channels. It would appear that the attempt of the medical profession to educate the public regarding its motives might have been misconstrued by many citizens. Although we are confronted with the confusions of the present, take some comfort from the men who founded America. They also lived in time of stress and found it difficult to determine the desired goals they wished to attain. However, they recognized that their task was to discover the political, religious and economical essentials upon which a new nation could be founded and to embody them in an agreement which could be generally accepted. Our task, now, like theirs, is to determine the main essentials, to see through propaganda and to cleave to the center of the problem without being ambushed somewhere on the periphery.

Dr. Elmer H. Henderson, president of the American Medical Association, has been especially concerned as well as many of the members, against

the dangers of federal subsidies as a means of providing financial aid to medical schools. It is of vital importance through American methods which will preserve the standards of freedom of medical education to insure an adequate future supply of doctors. The action of the Board of Trustees at the Cleveland meeting of the AMA in appropriating one-half million dollars as the initial contribution to an annual fund to be raised by the medical profession to assist medical schools has been widely acclaimed as one of the most constructive and important programs ever undertaken by physicians. It is possible by this means for physicians to supply sufficient funds to make any federal subsidies to medical schools unnecessary. At the present time the Council on Medical Education and Hospitals has estimated that between ten and fifteen million dollars per year is needed to meet annual operating costs. If the more than 193,000 members of the American Medical Association would contribute \$100 annually it is apparent what might be accomplished by the American Education Foundation.

This foundation has been established as a not-for-profit corporation, under the laws of the state of Illinois, to receive and distribute contributions to the fund from the individual members of the medical profession and friends of the profession. The Commissioner of Internal Revenue has been asked to rule that gifts to the foundation will be deductible in the computation of income taxes. An eleven man board of directors, headed by Dr. Henderson, chosen from the Board of Trustees, the officers of the Association and the Council on Medical Education and Hospitals will be responsible for arranging for the distribution of the funds to all approved medical schools. The funds are to be unrestricted, with each medical school free to determine how it can best use its share to further the basic training of its students. It is planned that the foundation will coordinate its activities closely with other major efforts to raise funds for medical education from voluntary sources. Every dollar contributed will go to medical schools with no strings attached.

Each member of the medical profession is urged to demonstrate his support of this new undertaking by contributing promptly and generously. Because of rising costs, inflation, fewer large individual benefactions and reduced income from endowments, the medical schools need, without further delay, assistance of the type this fund can give. It is the desire of the foundation that the first annual disbursement of funds to the medical schools be made this spring. It is clear, that, if the foundation's contribution is to be an effective one, a substantial fund must be raised by the medical profession within the next few months. It is therefore urged that each physician consider an annual contribution of \$100. Many of the contributions already received exceed this figure. When a physician feels that this amount is beyond his means, smaller contributions will be welcome, but the profession must recognize

that substantial sums are required and that token contributions alone will not be sufficient.

Almost every physician now practicing received his medical education for less than what it cost his medical school. While many physicians have discharged this debt to society in full or in part, by public and charitable activities and by donations to the schools with which they have been associated, many are still indebted to one or more medical schools for their training as students, interns or residents. Furthermore, the medical profession has traditionally accepted a large measure of responsibility for the training of the continuing flow of young physicians, on which it must depend for recruits and replacements in its efforts to serve humanity. It is to be expected, therefore, that all physicians, regardless of the other contributions they may have made to society, will want to share in the responsibility of making the foundation a success.

The American Medical Association has indicated its belief that the possibilities of securing adequate support for medical education from voluntary sources are far from exhausted. To prove this, actions as well as words are required. The challenge has now been made directly to the medical profession, whose members can meet this challenge by sending their contributions today to the American Medical Education Foundation, 535 North Dearborn Street, Chicago 10, Illinois.

Enteral Protein Hydrolysates

It was only natural that during the course of nutritional research, some thought would be given to the administration of protein breakdown products to human beings, and it was also natural, once this concept had arisen, that every avenue of administration be attempted. The result has been that thousands of dollars have been spent in research and in advertising seeking to force costly, disagreeable-tasting materials down the human gullet.

It is true that intravenous administration has some merit. If enough amino acids are given by vein, it is possible to change the nitrogen balance of a patient from negative to positive. Methods of parenteral protein therapy employing plasma, blood and albumin are much more costly than that employing amino acids. So it seems that the latter will continue to have a limited place in our armamentarium.

The wisdom of giving protein hydrolysates or amino acids by mouth, however, is doubtful. The amino acids are fairly good buffers and can be used in the treatment of duodenal ulcer; but their cost is so high, and the products so unpalatable and the results from therapy so equivocal that few clinicians are employing them. One of the reasons offered for the oral administration of protein hydrolysates was that they might be more readily absorbed into the system than natural proteins. This

hypothesis has not been proven. In fact, Free and Leonard¹ in 1944 using the technic of urea clearance and excretion came to the conclusion that "the normal gastrointestinal tract more readily handles large amounts of unhydrolyzed protein than it does equivalent amounts of amino acids." Recently, Althausen et al² performed extensive studies on a patient who had survived 90 per cent resection of the small intestine. "No striking differences were found in the degree of utilization of a diet consisting of natural foods as compared to a 'synthetic' diet." As a matter of fact, natural proteins were absorbed more completely than were synthetic proteins. They conclude that "predigested foods have only a limited use in diseases of the small intestines except for intravenous administration during acute phases."

It is our opinion that when the roll is called up yonder, amino acid therapy will be limited to the parenteral form. We now have scientific justification for discarding the unpalatable, costly oral mixtures which have been foisted on us. Let's stick to our Iowa beefsteak!

Recent Actions of the Council

During the past six months the Council has been actively investigating and studying different matters affecting the practice of medicine in the state. It has been working with the Board of Medical Examiners in trying to determine the best policy to follow in regard to licensure of residents and displaced physicians and how to achieve better inspection and enforcement of the medical practice act. The Attorney General has ruled that all residents must be licensed to practice in Iowa. Some hospitals have wished to have this ruling changed but the Council, after a thorough study, voted unanimous approval of the decision. It also voted approval of the present statutes which require that all physicians must be citizens of the United States before they can receive a license to practice medicine in Iowa.

Recently the State Department of Health employed an attorney to serve as enforcement officer for the profession. The Council approved of this step and promised full cooperation with the Board of Medical Examiners in reporting violations of the medical practice act and aid in enforcing the act.

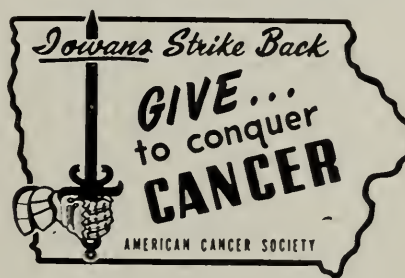
The work of various committees of the State Society has also been studied by the Council. It plans to ask different committee chairmen to meet with it regularly and talk over projected activities. This should make for better coordination between plans on the state level and actual accomplishment at the local level.

Another action taken by the Council is in regard

to the practice of providing free dinners for some of the institutes being presented by the Speakers Bureau in cooperation with other agencies and different divisions of the State Department of Health. After a good deal of deliberation, the Council went on record as disapproving the policy of taking funds from lay organizations to pay for dinners for doctors, even though the money was spent in the interests of education.

These are but a few of the constructive actions of the Council. It is our feeling that members of the State Society will all agree that licensure standards should be kept on as high a plane as possible to safeguard the public. It is also our feeling they will agree that money contributed to the various health organizations should be used for purposes more directly linked with the organization than is the case when the money is used to pay for dinners on educational institutes.

American Cancer Society



It has been the custom of the JOURNAL to signalize the month of April as the time when the American Cancer Society makes its annual campaign for funds. Inasmuch as last year the Iowa Division had its most successful campaign and raised more money over its quota than any division in the nation, it seems appropriate at this time to make a report to the physicians of the state about what has been accomplished. It is interesting to note that the administrative and campaign costs are said to be the lowest of any similar organization in the state. It is therefore most commendable that with this low overhead the Iowa Division has produced the best record in the country.

It would appear that the educational program as carried out by the Iowa Division has resulted in saving at least one life a day of a woman who might have died of a breast cancer. This is largely due to the film "Breast Self-Examination" which appears destined to run longer than any film shown in the state this year. Sixty prints of the film are available and these are being shown at a rate of 1,300 to 1,500 showings per month to groups varying from as few as eight women in a home to over 500 women in one high school. Members of the State Medical Society not only have been in attendance but have given short talks to introduce the film and conduct question and answer periods after the showing. Nearly every one of the 102 chapters has reported at least one case of a woman sec-

1. Althausen, G. L.; Uyeyana, K.; Simpson, R. G.: Digestion and absorption after massive resection of the small intestines. *J. Am. Gastro-Enterological A.*, 12:795-807 (May) 1949.

2. Free, A. H.; Leonard, J. R.: Studies on the ingestion of large quantities of protein and amino acids: *J. Lab. & Clin. Med.*, 29:963-969 (January-December) 1944.

ing the film, recognizing the danger signal when examining herself, consulting her family physician and having surgery completed all within an interval of one week. Many women who found lumps and were examined by their family physician found the condition not cancerous and thus allayed their fears.

Special American Cancer Society pamphlets are being distributed at the present rate of 100,000 per month. The quarterly publication, *New Horizons*, with its April issue will be going into 155,000 Iowa homes. Subscriptions are free but must be requested in writing. Over 2,000,000 pamphlets, brochures and other forms of literature were distributed in 1950. With the cooperation of the State Department of Health, *Tumor Topics* was distributed bi-monthly to all physicians in Iowa.

Supplementing the educational program, a speaker's bureau of over 200 lay and professional men has been active. A film library of 175 films has been widely utilized. Over 100 exhibits were prepared for demonstration in the state during 1950. Newspapers gave over 60,000 column inches regarding cancer progress or chapter activities. Radio stations gave over 2,400 one-quarter hour programs on cancer control. The professional educational program has been carried out in close cooperation with the State Medical Society. In the last three years 13 pathology residencies have been sponsored. This is significant when there are only 29 who are members of the Iowa Association of Pathologists. Five persons, doctors and laboratory technicians have attended two week courses in Exfoliative Cytology at Cornell Medical College, New York City, during the past three years. The Iowa Division will not take a back seat to any other division in the nation in the matter of sponsoring research on cancer. In the past three years \$342,000 has been applied to research; \$297,000 of this was forwarded to National Headquarters for approved research projects of which \$32,000 was returned for projects at the State University of Iowa. An additional \$145,000 was given directly to the State University of Iowa for research. Nine research projects plus funds to maintain and expand the radiation research laboratories were authorized during 1950.

Money has also been returned to each chapter for a service program. There are now in training at 23 schools of nursing 93 young Iowa women who are members of the first or second year classes. It is hoped that such trained personnel will be of much value in coming years to the cancer case finding service of each chapter. In accepting scholarships all of the nurses have agreed to finish training unless prevented by illness and to practice their profession for two years in Iowa following graduation or to repay the society.

All physicians should agree that this ambitious program as carried out in 1950 has accomplished much good in the fight against cancer and is worthy of further support in 1951.

Technical Exhibits

SIOUX CITY MEETING

A. S. Aloe Company
N. P. Benson Optical Company
Coca-Cola Company
Dobo Chemical Company
C. B. Fleet Co., Inc.
Gaynor-Bagstad Company
General Electric X-Ray Corporation
Holland-Rantos Co., Inc.
House of Vision
Investors Diversified Services, Inc.
Lanteen Medical Laboratories, Inc.
Lederle Laboratories Division
Eli Lilly and Company
Lutheran Hospital of Sioux City
M. and R. Dietetic Laboratories
Mead Johnson and Company
Medco Products, Inc.
Medical Protective Company
V. Mueller and Company
National Dairy Council
National Drug Company
National Rating Association
Ortho Pharmaceutical Corporation
Parke, Davis and Company
Pet Milk Company
Philip Morris and Company, Ltd., Inc.
Physicians and Hospitals Supply Company
Picker X-Ray Corporation
Professional Management—Iowa
Riker Laboratories, Inc.
A. H. Robins Company, Inc.
Sandoz Chemical Works, Inc.
W. B. Saunders Company
G. D. Searle and Company
Schering Corporation
Security Laboratories
Smith-Dorsey Company
E. R. Squibb and Sons
Standard Chemical Company
Sutliff and Case, Inc.
Toller Drug Company
Ulmer Pharmacal Company
Upjohn Company
Winthrop Stearns, Inc.
Wyeth, Inc.

Advertisers in Hand Program

The following firms are making it possible for us to send you the program of our annual meeting by their kindness in advertising. We hope you will support them in every way possible. Picker X-ray, Tony's Fine Foods, Hotel Martin, Gaynor-Baystad, Joe Gantz Steak House, Charlie's Restaurant, Green Gables, Bishop's Cafeteria, Katz Drug Company, Physicians Optical Co., *Journal Tribune*, Fred J. Schamp, Hotel Jackson, and Mayfair Hotel of Sioux City; Brown Garage, Standard Chemical, House of Vision, Iowa Sound Service, Koch Brothers, Des Moines Stationery, L. C. Hunt, Hotel Fort Des Moines, Bankers Printing Company and Yellow Cab of Des Moines; Investors Diversified Service of Waterloo, Benson Optical Company of Minneapolis, Chicago Dietetic Supply Company of Chicago; Blue Cross and Blue Shield and the Seven-Up Company of Iowa.

President's Page

My Swan Song

Thanks for everything. For the honor of being your President the past year—a year that was filled with many activities of vital importance to the medical profession and the American way of life. For the unselfish time and long continued efforts of the chairmen and members of the various committees. For the wisdom shown by the Council and work done by its most active and energetic chairman. For the dignified and gentlemanly way the Grievance Committee has conducted itself toward both laymen and doctors, with a full and impartial investigation of every complaint referred to it and action taken whenever and wherever justified. For the cooperation and hard work of the Society's attorney, Barney Myers. For the interesting program the various sectional chairmen have arranged for our April meeting. For the Committee on Scientific Exhibits for its splendid work in arranging such a grand exhibit. For the devotion, loyalty and tireless energy of the personnel of the State Office and for its systematic and thorough way of doing business and its full reporting of various meetings. Thanks to all the members who have aided me so much and last but not least to your incoming President, Don Conzett, who has been such a help and inspiration to me.

T. F. Thornton, M. D.
President

NEWS NOTES

From The Committee On Medical Service And Public Relations

SUMMARY OF BLUE CROSS-BLUE SHIELD ACTIVITIES DURING 1950

BLUE CROSS ASSOCIATED HOSPITALS SERVICE, INC.,
SIOUX CITY

This Blue Cross plan for northwest Iowa and South Dakota reports more than one million dollars paid in claims during 1950. Enrollment as of December 31, 1950 was 112,567. A goal of 150,000 Blue Cross members in the area during 1951 has been established by the executive secretary of the plan.

Blue Shield has also been well accepted in the area. The enrollment jumped from 10,000 to 23,000 during 1950 and every effort is being made to reach 50,000 Blue Shield members by January 1, 1952.

Income for 1950 aggregated \$1,224,576.10. Overhead costs are being reduced as membership increases giving people served in the area the maximum benefits in prepaid hospital protection.

BLUE SHIELD, IOWA MEDICAL SERVICE, DES MOINES

The Blue Shield plan has continued its growth and has provided more protection for more members each year. During 1950 the membership was increased from 171,776 to 261,599 members. On behalf of the members, \$1,452,573.65 was paid for medical and surgical care. Of this total, \$1,236,140.27 was paid directly to participating physicians and the balance, \$216,433.28 was paid directly to subscribers because they received services either out of state or from non-participating physicians. An average of 185 Doctor Service Reports are processed through the claim department daily.

The following table indicates the major cost items and most frequent services performed during the year:

Procedure	Services	%	Amount Paid	%
Hospitalized Medical Care...	6,482	15.2	\$ 175,130	12.1
Accident Care—Non-Fracture	4,387	10.2	49,762	3.4
Accident Care—Fractures	1,618	3.8	66,381	4.6
Cholecystectomy	506	1.2	51,278	3.5
Herniotomy	462	1.1	42,835	2.9
Hemorrhoidectomy	690	1.6	29,688	2.0
Appendectomy	1,768	4.1	176,531	12.2
Maternity Benefits	3,782	8.8	215,528	14.8
Hysterectomy	675	1.6	86,790	6.0
Tonsillectomy	3,245	7.6	88,120	6.1
Anesthetic	6,682	15.6	67,541	4.6
X-Ray	3,786	8.8	32,966	2.3
All Other	8,762	20.4	370,054	25.5
TOTAL	42,845	100.0	\$1,452,574	100.0

BLUE CROSS HOSPITAL SERVICE, INC., DES MOINES

Hospital Service, Inc., of Des Moines has continued its satisfactory record of progress in 1950 as is indicated below:

Membership at the end of the year
showed a total of..... 538,321

Members hospitalized 80,276
Days of care provided..... 508,494
Allowances for care of members..\$5,718,343.63

There are 107 hospitals participating in this program at the present time. Operating costs of the Service were kept to a low of 9.84 per cent of income during 1950.

A new program was opened for enrollment of self-employed persons and those in groups of five or less who are under 65 years of age. With the common employer groups of six or more and the rural enrollment, this spreads the eligibility to a larger number.

To meet public demand for more complete coverage the Plan is offering a Semi-private 70-day comprehensive contract to groups of 26 or more. It provides "paid-in-full" benefits for hospital care in semi-private room accommodations.

Hospitals, doctors and Plan management need to further study the problem of giving members a maximum of proper care, yet keep within the public's ability to pay. In the voluntary plans there are no taxpayers to pay the deficits.

Some believe erroneously that increased membership lowers the risk cost. It does not and cannot; it only spreads the risk.

Cognizant of the necessity of equitable payments both of hospitals and between hospitals, a change in method of paying based on the cost formula of the American Association Principles of Accounting for Hospitals was adopted in January, 1950. New problems have arisen, however, and there are still discrepancies to be ironed out.

SPEAKER'S BUREAU RADIO SCHEDULE

WOI—Thursdays at 11:15 a. m.

April 5. New Spring
April 12. Never Too Old
April 19. End of the Rainbow
April 26. The Apple Tree

WSUI—Tuesdays at 11:45 a. m.

April 3. Exercise
April 10. Vision and Hearing Aids
April 17. You and Your Doctor

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. CLAIRE H. MITCHELL, Indianola

President-Elect—MRS. HOWARD W. SMITH, Woodward

Secretary—MRS. RALPH J. SELMAN, Ottumwa

Treasurer—MRS. DWIGHT C. WIRTZ, 449-56th St., Des Moines

STATE BOARD MEETING SPEAKER

Mr. W. B. Schoenbohn, Director of the Hospital School for the education and treatment of severely handicapped children, Iowa City, addressed members of the State Board of the Auxiliary February 21 at the Savery Hotel in Des Moines. He pointed out that only mentally normal, though physically handicapped children are admitted at the hospital. They must be children who are unable to attend public school or are ineligible for existing state institutions. No epileptics are accepted. The preferred age is between three and ten years old because of the limitations of space and funds; better results can be obtained during those ages. As facilities improve, it may be possible to increase the age limits. Ordinarily, children remain in the hospital-school from one to three years. Work is done with children having the following handicaps: cerebral palsy, muscular dystrophy, spina bifida, arthritis and infantile paralysis. A child may gain admittance only if he is educationable and will stand a chance for partial or total rehabilitation.

Aside from the direct treatment of handicapped children, the hospital provides experience and training for teachers, technicians, social workers, nurses, doctors and therapists.

When the new school is completed, it will take care of 100 patients; 30 are enrolled at the present time. Increased building costs make the present appropriation of \$150,000 markedly inadequate.

A school with a capacity of 100 could never hope to take care of the 13,000 crippled children in Iowa. At present, 2,000 of these need some form of special education. The Outpatient Guidance Clinic wants to assist by "providing adequate, thorough diagnosis and evaluation for the handicapped children in Iowa."

MRS. KEITH M. CHAPLER

PROPOSED AMENDMENTS TO STATE BY-LAWS

ARTICLE IV: COUNTY AUXILIARIES

Section 5: Each County Auxiliary shall pay to the Treasurer of the State Auxiliary, not later than March 1, annual dues consisting of the per capita dues determined by the voting delegates at the Annual Meeting.

ARTICLE VI: DUES

Section 1: At each Annual Meeting the voting delegates, upon recommendation of the board,

shall fix the amount of the per capita dues of all members, such per capita dues consisting of dues to the State Auxiliary and to the Woman's Auxiliary to the American Medical Association.

Section 2: The annual dues shall be payable on or before January 1 of the year for which they are levied and are delinquent after March 1 of that year.

Section 3: The State Treasurer shall forward the National per capita dues to the National Auxiliary.

ARTICLE VII: OFFICERS AND THEIR ELECTION

Section 1: The officers of this Auxiliary shall be a President, a President-Elect, a First Vice President, a Second Vice President, a Recording Secretary, a Corresponding Secretary, a Treasurer, and one Councilor from each Councilor District. The Councilor Districts of the Woman's Auxiliary shall conform to those of the Iowa State Medical Society.

Section 2: These Officers, with the exception of the Corresponding Secretary, shall be nominated by a committee and elected by ballot at the Annual Meeting. The President, the President-Elect, the Vice Presidents, the Recording Secretary and the Treasurer shall serve for a term of one year or until their successors are elected. Four Councilors shall be elected each year for a term of three years with the exception of every third year when the number of Councilors elected shall correspond to the remaining number of Councilor Districts. The Corresponding Secretary shall be appointed by the President.

SECTION 3: THE NOMINATING COMMITTEE

Nominations shall be called for from the floor at the Annual Meeting.

ARTICLE VIII: DUTIES OF OFFICERS

Section 7: The Councilors shall lend all possible assistance in promoting county organizations and membership-at-large and assist in coordinating the work of the Auxiliary.

ORGANIZATIONS SPONSORING SCHOLARSHIP OR LOAN FUNDS FOR STUDENT NURSES

Order of the Eastern Star: \$750.00; not more than $\frac{1}{3}$ of this amount per year. One parent must be a member in good standing. Three per cent interest charged from date of loan. Apply at local chapter or Mrs. W. A. Seidler, Jamaica, Iowa.

The American Cancer Society: Scholarships; pays tuition, fees, books, and uniforms for three year course in nursing. Pre-nursing test required before award is given. Awarded on basis of need, previous scholarship records, character and ability. Applicant must write letter telling why she wants to become a nurse. Write to: Iowa Division American Cancer Society, 117½ N. Federal, Mason City, Iowa.

American Legion Auxiliary: Scholarship contest, \$300. Based on theme written about "Why I want to be a Nurse" and scholastics.

La Vern Neyes Scholarship for Colleges and Universities, only: \$150.00. Must be related to Service Man or Woman or Veteran of World Wars I or II and resident of Iowa. Write to: Mrs. A. W. Hinderman, Wapello, Iowa.

P. E. O. Sisterhood: Loan of \$400.00 per year for five years. Scholastics and health determine eligibility. Apply at local chapter or write to: Mrs. Irvin Bleeker, 522 Fremont Street, Iowa Falls, Iowa.

Woman's Auxiliary to Iowa State Medical Society: Loan depending upon amount of funds on hand. Previous amounts of \$400 and \$450 were loaned. If prospective student meets eligibility requirements and funds are available, she should apply to: Mrs. Carl Hanson, 1445 Bertch Avenue, Waterloo, Iowa.

Iowa State Department of Health: Scholarship with agreement to work in Iowa two years upon completion of course. \$125.00 per month for one year. Tuition and maintenance expense. Only registered, graduate nurses from accredited schools eligible. This scholarship is for post-graduate work in Public Health Nursing only.

Almost every accredited School of Nursing in Iowa has a loan fund and often scholarships as well. If a student is interested in a particular hospital, we suggest that she write to that hospital. For further information, write to: Mrs. N. Hersey, 304 Third Avenue, S.W., Independence, Iowa.

YOU COULD DO THIS

As an individual doctor's wife or as an Auxiliary, see that a copy of *SANTA CLAUS, M.D.* by W. W. Bauer, M.D., is available in each local library. The editor of *Today's Health* presents socialized medicine in the most lucid and witty way. This book offers fine review material for your Auxiliary or other groups.

AMA WOMAN'S AUXILIARY ANNUAL MEETING

A few more months, and the members of the Woman's Auxiliary to the American Medical Association will be arriving in Atlantic City, New Jersey for their annual convention, June 11 to 14.

Have you made your reservations? If not, send your request at once to Dr. Robert A. Bradley, Chairman, AMA Housing Bureau, 16 Central Pier, Atlantic City, New Jersey.

CLINICOPATHOLOGIC CONFERENCE

(Continued from page 152)

though the chest films are entirely normal, or show minimal findings. The question now arises whether a single postero-anterior view of the chest is sufficient for routine purposes. Should not multiple views of the chest be taken before submitting the patient to ventriculography or craniotomy?

So far as the incidence of cerebral metastases in carcinoma of the lung, I believe that metastases will be found in the brain in approximately 50 per cent of those cases which are autopsied here.

What would we do with this patient if a similar situation arose today, and if the apical lesion were reported as probable malignancy? I believe that every effort should be made to determine the nature of the intracranial lesion, unless there is definite evidence from the ventriculograms that multiple lesions are present. If a solitary metastasis is encountered, or if the lesion is of another type, the chest lesion can then be dealt with separately. I feel sure that this type of approach will produce instances in which curative or palliative procedures will have been carried out.

Dr. Meyers: I agree these patients deserve exploration. We do not hesitate to operate on cases that have "primary" brain tumors of the highly malignant, gliomatous type, even though we know ahead of time that the statistical likelihood is great that we will encounter such a lesion and that the individual suffering from such a lesion has the cards stacked against him and that his life expectancy is small. The life-expectancy in the malignant types of glioma, e.g., spongioblastoma multiforme, is not much better than six to 12 months and as Dr. Ehrenhaft has suggested, the life-expectancy of patients known to have carcinoma of the lung is upwards of two years. When they have metastases to the brain in addition, it is about six months. Hence, we are within the range of cases that we would not hesitate to attack if we thought we were dealing with a primary tumor. If, therefore, a patient exhibits a carcinoma of the lung together with evidence of a space-encroaching intracranial lesion; and, if the clinical and roentgenographic studies lead us to believe we are dealing with a solitary metastasis, we should not be reluctant to attack the tumor in the brain.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 505 Bankers Trust Bldg., Des Moines 9, Iowa.

STATE DEPARTMENT OF HEALTH

Walter L. Biering

VENEREAL DISEASE, A PUBLIC HEALTH EDUCATION PROBLEM IN IOWA

Our 1950 figures on venereal disease in Iowa are now in the final stages of statistical breakdown. With 1,952 cases reported in Iowa for the year, the attack rate for reported cases of syphilis for the state is low 7.48 per 10,000 persons.

The ten counties reporting the highest attack rates are as follows:

County	1950 Population	Syphilis Cases Reported in 1950	Attack Rate Per 10,000
1. Polk	224,910	536	23.83%
2. Lee	42,994	94	21.86%
3. Henry	18,687	32	17.12%
4. Page	23,858	35	14.67%
5. Buchanan	21,666	29	13.39%
6. Johnson	45,541	59	12.96%
7. Linn	103,246	127	12.30%
8. Scott	99,192	111	11.19%
9. Cherokee	19,031	20	10.51%
10. Black Hawk	99,576	102	10.24%

Figures can be deceiving. The first impression from the above figures is that about one fourth of Iowa's cases of syphilis are in Polk County. The behind-the-figures interpretation is that: (1) a proportionately larger per cent of cases diagnosed in Polk County are reported and (2) attempts are made to follow-up every case reported in the county. This follow-up is done by the venereal disease control officer for the city of Des Moines and a public health nurse working at the Broadlawns Hospital Venereal Disease Clinic. These two persons have for the year, during their case investigations, obtained an average of 3.4 contacts for each case investigated. This 3.4 average includes only those persons sufficiently well described that they can be located for questioning. Since each case of infectious syphilis has a source case usually still infectious, these investigations bring many new infectious cases to light and may have one or more contact cases. Thus a large per cent of Polk County's 536 reported cases can be attributed to the work of these two investigators and educators.

Three counties in the high-ten list probably do not belong there. Page, Henry and Cherokee Counties are the homes of three large state hospitals. While we attempt to reallocate communicable disease to the home county there may be occasions when we do not suspect the person is a hospital patient or when we cannot obtain a home county. Only six Iowa Counties appear with no reported

cases. No county is actually without venereal disease. We know venereal disease is where we look for it. We know too that more is found where we look hardest for it. We can educate our Iowa people to help us look for it as well as we can educate the infected person as to the necessity of early adequate treatment.

BRUCELLOSIS CASES FOR IOWA OF 1950

Our brucellosis case reporting in Iowa has previously been based on (1) the numbers reported by card from the private physician and (2) others, whom the physician in answer to a questionnaire following positive serologic tests, states are clinical cases.

Reporting has never been better than fragmentary in Iowa in spite of the high numbers of cases reported in comparison with other states. Few cases are reported directly to us by the physician. Also the number of laboratories running brucellosis agglutination tests has increased and since the Iowa State Hygienic Laboratory is the only laboratory regularly reporting positive tests to us, the percentage of positive tests reported has proportionately decreased. Furthermore, many of the milder cases never consult their physicians regarding the illness.

To get a truer picture of brucellosis incidence in man in Iowa, we have done two things during 1950. We have changed the case report form, making it much easier for the physician to complete. We have accepted the policy of many other states that positive agglutination titers of 1:160 or over represent cases of brucellosis. If these cases do not already appear on our master file for brucellosis, we add them to it, if there is no response from the physician receiving the questionnaire relative to the case.

We are hoping during the present year to make arrangements whereby private laboratories will report positive brucellosis serology findings to us so that we can follow them as we do those from our own laboratories.

The following summary represents our own final totals of 549 cases of brucellosis in Iowa in 1950:

BRUCELLOSIS CASES FOR 1950

County	Cases Reported by Physicians	Cases Added by Titer of 1:160 or Over
Adair	2	2
Adams	1	1
Appanoose	2	2
Benton	3	3
Black Hawk	4	11
Boone	3	1
Bremer	—	5
Buchanan	3	—
Buena Vista	3	—
Butler	—	3
Calhoun	4	—
Carroll	1	2
Cass	2	3
Cedar	5	5
Cerro Gordo	8	12
Cherokee	2	2
Chickasaw	—	3
Clarke	—	1
Clay	3	—
Clayton	2	2
Clinton	3	3
Crawford	4	3
Dallas	2	4
Davis	1	7
Decatur	1	1
Delaware	2	3
Des Moines	1	8
Dickinson	3	—
Dubuque	7	18
Emmet	—	1
Fayette	—	3
Floyd	1	—
Franklin	6	4
Fremont	2	1
Grundy	4	2
Hamilton	3	6
Hancock	2	1
Hardin	6	5
Harrison	1	1
Henry	2	1
Howard	4	—
Humboldt	1	—
Ida	4	1
Iowa	2	4
Jackson	1	5
Jasper	1	1
Jefferson	1	1
Johnson	1	14
Jones	1	3
Keokuk	—	3
Kossuth	3	3
Lee	2	3
Linn	8	8
Louisa	6	3
Lucas	1	—
Lyon	4	1
Madison	2	4
Mahaska	1	5
Marion	2	6
Marshall	3	7
Mitchell	1	2
Monona	1	2
Monroe	1	1
Montgomery	—	6
Muscatine	3	8
O'Brien	1	1
Osceola	—	2
Page	6	5
Plymouth	1	3
Pocahontas	1	3
Polk	2	8
Pottawattamie	6	4
Poweshiek	3	1
Sac	3	2
Scott	2	8
Shelby	1	—
Sioux	5	8
Story	1	6
Tama	3	5
Taylor	5	2
Wapello	7	8
Warren	—	1
Washington	7	8
Wayne	2	—
Webster	3	11
Winnebago	1	1
Winneshiek	3	3
Woodbury	3	11
Worth	—	1
Wright	3	3
TOTAL	222	327

Thus, the total for 1950 is 549 Cases

Iowa's reported Brucellosis cases for the period 1940 to 1950 inclusive are:

Year	Cases	Year	Cases
1940	250	1946	638
1941	354	1947	902
1942	333	1948	412
1943	418	1949	377
1944	295	1950	549
1945	482		

CLINICAL REPORT FORM

The following is a copy of the brucellosis clinical report the physician is asked to complete:

BRUCELLOSIS CASE REPORT

Patient's Name..... Age..... Sex.....
 Address..... County..... Urban..... Rural.....
 Number of years at above address..... Occupation.....
 Condition before illness: Good..... Average.....
 Other illness: (specify).....
 Onset of illness: Date.....
 Illness: Mild... Moderate... Severe... Acute... Chronic...
 First Attack..... Recurrence.....
 Clinical symptoms: (check)
 (1) Weakness. (2) Fever..... (3) Chills..... (4) Sweats.....
 (5) Malaise... (6) Headache... (7) Muscular or joint pains...
 (8) Backache. (9) Anorexia.. (10) Loss of weight.....
 (11) Other (specify).....
 Is patient febrile now?.....
 Diagnosis: (a) Brucellosis..... (b) Other.....
 Duration of illness:.....
 May the Health Department have permission to contact this patient regarding sources of infection?.....
 Complications.....
 Signature of Physician.....
 Address.....
 Date.....

MORBIDITY REPORT

Diseases	Feb. 1951	Jan. 1951	Feb. 1950	Most Cases Reported From Counties:
Diphtheria	0	2	0	
Scarlet Fever	76	44	57	Boone, Polk
Typhoid Fever	0	2	0	
Smallpox	0	0	0	
Measles	72	20	795	Boone, Cerro Gordo, Polk
Whooping Cough	36	18	34	Black Hawk, Clinton, Polk
Brucellosis	30	24	8	Scattered 1 or 2 to a county
Chickenpox	409	287	279	Black Hawk, Des Moines, Johnson, Story
Influenza	0	0	1	
Meningitis men.	7	3	4	scattered (1 to a county)
Mumps	231	258	360	Boone, Des Moines, Linn
Pneumonia	4	13	8	Polk 1, Union 3
Poliomyelitis	8	6	13	Scattered
Rabies in animals	42	50	18	Hancock 5, Polk 6, Washington 4, other counties not more than 3
Tuberculosis	84	51	37	For the state
Gonorrhea	53	70	52	For the state
Syphilis	107	126	143	For the state

ATOM WARFARE NURSING COURSES

The State Director on Civil Defense has requested the Nurse Representatives from Iowa who attended the Training Course on Nursing Aspects of Atom Warfare, presented at the University of Minnesota, January 29 to February 3, to give a series of courses in Iowa during April. Plans have been made for two day institutes to be held at Des Moines, Council Bluffs, Sioux City, Mason City, Waterloo and Washington.

In order to reach the maximum number of nurses it will be necessary for one nurse representative from each hospital, public health agency and school of nursing, to attend one of the institutes. Send the name of the representative appointed by your organization by March 10 to the State Department of Health, Des Moines 19, Iowa.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

CURRENT THERAPY, 1951, edited by *Howard F. Conn, M.D.* W. B. Saunders Co., Philadelphia, 1951. Price \$10.00.

GERIATRIC NURSING, by *Kathleen Newton, R.N., M.A.*, in charge of graduate nurse education, Cornell University-New York Hospital School of Nursing. C. V. Mosby Co., St. Louis, 1950. Price \$4.50.

PAUL EHRLICH, by *Martha Marquardt*. With an introduction by Sir Henry Dale. Henry Schuman, Inc., New York, 1951. Price \$3.50.

PARASITIC INFECTIONS IN MAN, edited by *Harry Most, M.D.* Symposium held at the New York Academy of Medicine, March 15-16, 1949. Columbia University Press, New York, 1951. Price \$4.50.

PRIMER ON FRACTURES, prepared by the Special Exhibit Committee on Fractures in Cooperation with the Committee on Scientific Exhibit of the American Medical Association. Paul B. Hoeber, Inc., New York, 1951. Price \$2.00.

TO PROSPECTIVE MOTHERS, by *William E. Hunter, M.D., F.A.C.S.*, Diplomate American Association of Gynecology and Obstetrics and *Bernard H. Smith, B.A., M.D.*, Fellow of the Los Angeles Obstetrical and Gynecological Society, Member International College of Surgeons, Attending Obstetrician and Gynecologist, Saint John's Hospital, Santa Monica, Calif., Associate staff, Santa Monica Hospital. Bruce Humphries, Inc., Boston, 1950. Price \$2.50.

BOOK REVIEWS

PEDIATRIC X-RAY DIAGNOSIS, by *John Caffey, M.D.* (Year Book Publishers, Inc., Chicago, \$22.50).

This is the second edition of Dr. Caffey's pediatric roentgenologic standby. It has been changed in format to a double-columned page using the same type as the first edition. To the original core of text, several rather extensive additions have been made; the chapters on congenital cardiac and congenital skeletal anomalies are among the longest extensions. The author employs numerous striking and clear sketches, photographs and slide reproductions to illustrate his points.

The analysis of each organ system is preceded, as in the previous editions, by a description of the normal anatomy involved; and the discussions of abnormal roentgenology are broken up into chapters for convenient reference. A brief, good, up-to-date bibliography follows each chapter.

The index is extensive and easy to use. There is still no quick-reference chart for times of epiphyseal closure, although there is one for the appearance time of the epiphyses. All in all, an extraordinarily high standard is maintained; the book is worth the price.—*R. M. Kafka, M.D.*

HUMAN PATHOLOGY, by *Howard Karsner, M.D.* (J. P. Lippincott Co., Philadelphia, \$12.00).

When a textbook has reached the seventh edition, it must be self evident that the profession has found it of such value as to demand its perpetuation. This entire book has been thoroughly revised and brought up-to-date. There has been extensive enlargement of the chapter on infectious disease, and chapters on pathology of the eye and skin form welcome additions. Many new

pictures are included and the liberal bibliographies have been brought up-to-date by including many recent reviews.

Dr. Karsner's work remains as an excellent basic text for the medical student as well as a handy reference for the practitioner desirous of refreshing his memory about descriptive pathology.—*W. Rindskopf, M.D.*

THE 1950 YEAR BOOK OF MEDICINE (May, 1949-May, 1950), edited by *Paul B. Beeson, M.D.*, *J. Burns Amberson, M.D.*, *William B. Castle, M.D.*, *Tinsley R. Harrison, M.D.*, and *George B. Eusterman, M.D.* (The Year Book Publishers, Chicago, \$5.00).

This résumé of medicine for the period stated is a valuable contribution to American as well as foreign literature. Its editors have devoted a lifetime to medicine, and it should be ubiquitous to every physician. It is needless to say that every medical library should carry on its shelves the annual editions of this year book. Not only an excellent medical reference volume, it contains answers to many pharmacological questions, particularly pertaining to their developments in the use of antibiotics.

The men who contribute to this volume are nationally and internationally known and their frequent editorial comments on various articles are interesting and instructive.—*C. B. Luginbuhl, M.D.*

ESSENTIALS OF OPHTHALMOLOGY, by *Roland I. Pritkin, M.D.* (J. B. Lippincott Co., Philadelphia, \$7.50).

Part I of this book is a practical, concise discourse of anatomy, physiology methods of examination of the eye, the extra-ocular muscles, spectacles and industrial ophthalmology. Physiologic optics, physiology of vision, optical principles and neurophysiology of the eye are well described for a small text book.

Part II of the book covers diseases of the eye. Anatomical, gross and microscopic considerations are briefly discussed and clearly illustrated. Generally, the subjects are covered differently than in books for beginners or general practitioners. There are several tables on extra-ocular muscles, optic foramina, development of the retina and stages of embryonic development of the eye. Under treatment, certain newer methods are touched upon, including the use of antibiotics, electrocoagulation in retinal detachment and keratoplasty. This volume is useful for its precise and brief information in the field of ophthalmology.—*H. J. McCoy, M.D.*

MODERN PRACTICE IN PSYCHOLOGICAL MEDICINE, edited by *J. R. Rees, M.D.*, (Paul B. Hoeber, Inc., New York).

This volume is a collection of small monographs by 23 eminent English physicians, four professors and two social workers. It is edited by *J. R. Rees*, Honorary Consulting Psychiatrist to the Army who, in his selection of subject matter and contributors, kept in mind the necessity of a book which would be helpful alike to medical students and general practitioners. Quite rightly

he made no attempt to include material which might be controversial or demanding specialist experience.

This book is divided into 25 chapters which cover a wide range of subjects pertaining to psychological medicine, both normal and abnormal. Here the student or busy practitioner can turn at once to the subject demanding his attention and find a well written but concise explanation, devoid of high-sounding and technical medical terminology.

Psychosomatic medicine is accorded generous space. Its contributor, Dr. E. D. Wittkower, aptly points out how the old family doctor of years gone by practiced this specialty without knowing it, since he had a well grounded knowledge of medicine plus an intimate conception of the personalities of his patients, their progenitors, their mode and way of life, habits, worries and environment. Wittkower laments the passing of the family doctor who unwittingly possessed knowledge of psychosomatic medicine and practiced it, for with his passing, only the physician who is willing to take the necessary time to dig out the knowledge, which, to the family doctor was first hand, will be in position to understand and help these many unfortunate and misunderstood patients.

The book closes with its chapter on Medico-Legal Aspects of Psychiatry as practiced in England, Wales, Scotland, North and South Ireland and in the United States. Dr. Samuel W. Hamilton of New Jersey and a former president of the American Psychiatric Association, is the only American contributor.

The book is well arranged. Its table of contents gives the reader, at a glance, the subjects outlined in the various chapters and its index is helpful in finding the particular thing which the reader desires information about. It should be well received by the medical profession.—*T. B. Throckmorton, M.D.*

MEDICAL DIAGNOSIS—APPLIED PHYSICAL DIAGNOSIS, by Roscoe L. Pullen, M.D. (W. B. Saunders Co., Philadelphia, \$12.50).

This volume is divided into 24 chapters, each division being developed by a different co-author. These writers have presented their material for use by the physician or student who is in need of quick consultation with one well qualified in his clinical specialty.

The editor has added much to the value of this work by including chapters applied to the physical diagnosis of children, psychiatric and the aged patients. Chapters on blood and electrocardiographic diagnosis add much to the completeness of the book. Illustrations are used extensively in each chapter.

It is seldom that one can find a work as complete and comprehensive in the field of medical diagnosis in one book. Dr. Pullen has built a volume that will help to meet the daily needs for those interested in clinical medicine. I recommend it for every physician's and student's working library.—*O. A. Elliott, M.D.*

HUMAN STERILIZATION, by Robert L. Dickinson, M.D., and Clarence J. Gamble, M.D. (Human Betterment Federation, Des Moines, \$.25).

This pamphlet presents the technics of permanent conception control. Although the monograph deals primarily with technics, there is a section describing the indications for sterilization. It is replete with excellent illustrations. Interested physicians may obtain a copy by addressing the Human Betterment League of Iowa, 512 Ninth Street, Des Moines.—*E. M. George, M.D.*

HANDBOOK OF PHYSIOLOGY AND BIOCHEMISTRY, by R. J. S. McDowall, M.D. (The Blakiston Co., Philadelphia, \$7.00).

This combination of two subjects in one volume is a new idea to me. The author has attempted to outline the simplest facts concerning physiology and biochemistry so that the reader may not be confused with a mass of details. Accordingly, the subject material should be of most value to the medical student, to student nurses and to individuals interested in "fringe fields." The material described herein is relatively routine and standard in character. Because of the brevity of the discussion of each individual topic, the volume will prove to be of little value for the practitioner who is interested in data on a specific point of interest. All in all, however, the book is quite clearly written and should be a help to the three types of individuals mentioned above.—*D. A. Glomset, M.D.*

THE 1950 YEAR BOOK OF PEDIATRICS (July, 1949-July, 1950), edited by Henry G. Poncher, M.D. (The Year Book Publishers, Chicago, \$5.00).

This volume is the fiftieth anniversary number of the Year Book of Pediatrics, a publication which is looked forward to each year by the pediatrician, who finds condensed in a small book of 500 pages a review of the pertinent pediatric literature for the preceding year. This volume differs from its predecessors in that it contains guest editorials by specialists from various fields of pediatrics. They contribute to the value and interest, for each editorial gives a brief historical survey and a summation of the present status in each particular field.

The subject matter is covered systematically. The parenthetical remarks by the author, in which he emphasizes certain points, questions the validity of others and evaluates the material, is one of the outstanding features in these helpful reviews.—*E. H. Kelly, M.D.*

TEXTBOOK OF GYNECOLOGY, by Arthur H. Curtis, M.D. and John W. Huffman, M.D. (W. B. Saunders Co., Philadelphia, \$10.00).

Previous editions of this standard text are familiar to all physicians. The chapters have been carefully reviewed and revised, giving the book a much greater clinical value. It is exceptionally well illustrated, especially those sections dealing with surgical procedures for cystocele, rectocele and prolapse of the uterus.

While the authors do not attempt to invade the field properly belonging to the urologists, good discussion is included of urinary tract problems in gynecology.

In addition to its wide use as a textbook for medical students, this book is recommended as a standard reference to any physician encountering gynecological problems.—*H. K. Shiffler, M.D.*

FUNCTIONAL ANATOMY OF THE LIMBS AND BACK, by W. Henry Hollinshead, Ph.D. (W. B. Saunders Co., Philadelphia, \$6.00).

Dr. Hollinshead has prepared this volume as a result of anatomical research of more than 20 years duration. While limited to limbs and back in its scope, it represents an excellent presentation of the subject. All physicians would find this book of value in clarifying their knowledge concerning the anatomy of the limbs and back.—*E. M. George, M.D.*

SOCIETY PROCEEDINGS

MEETINGS

Black Hawk

Dr. William O. Thompson, a Chicago internist, spoke on "Clinical Uses of ACTH and Cortisone" at a regular meeting of the Black Hawk County Medical Society February 20 at Hotel Russell Lamson in Waterloo.

Cerro Gordo

The Cerro Gordo County Medical Society held its monthly dinner meeting March 13 at the Hotel Hanford in Mason City. Dr. Willis M. Fowler, SUI professor of internal medicine, spoke on "Administrative Problems in a College of Medicine."

Des Moines

Members of the Des Moines County Medical Society viewed an army motion picture showing effects of atomic warfare on the population of Hiroshima February 13 at the Hotel Burlington in Burlington.

Johnson

The Johnson County Medical Society met March 7 at the Hotel Jefferson in Iowa City for a dinner meeting. Dr. R. L. King of the SUI Department of Zoology spoke on "Mixed Colonies in Ants."

Polk

A panel discussion of hypertension by staff members of the SUI College of Medicine, moderated by Dr. William B. Bean, was presented March 21 to members of the Polk County Medical Society.

Sac

The Sac County Medical Society recently elected the following officers for 1951: president, Dr. Clifford E. Lierman, Lake View and secretary-treasurer, Dr. Aloysius A. Blum, Wall Lake.

Shelby

Dr. Gerald E. Larson of Elk Horn was elected president of the Shelby County Medical Society at the society's annual meeting February 21 at Harlan. Dr. Joseph H. Spearing of Harlan was elected secretary-treasurer.

Sioux Valley Medical Association

Dr. Robert H. McBride of Sioux City was elected president of the Sioux Valley Medical Association March 1 at the fifty-fifth annual meeting in Sioux City. Dr. Edward H. Sibley of Sioux City was re-elected secretary.

Woodbury

The March meeting of the Woodbury County Medical Society was held jointly with the Interstate Veterinary Medical Association March 15 at the Mayfair Hotel in Sioux City. Dr. Alfred G. Karlson of the Mayo Foundation for Medical Education and Research and Dr. Charles W. Gray of the State Sanatorium at Oakdale spoke on problems of tuberculosis common to Veterinary and Human Medicine.

Worth

The Worth County Medical Society met February 13 at the home of Dr. and Mrs. Gabriel S. Westly in Manly following dinner at the Sunset Inn.

PERSONALS

Dr. Everett D. Christensen of Spencer spoke on "Heart Disease" at the Kiwanis Club meeting February 5, in Spencer.

Dr. Clinton E. Harris of Grinnell spoke on "Duty of a Nurse as a Teacher" January 4 at a meeting of the St. Francis Nurses' Study group in Grinnell.

Dr. Lyal J. O'Brien of Fort Dodge spoke on "The Patient, the Doctor and Cancer" February 26 at the meeting of the Hamilton County Public Health Council.

Dr. Leon F. Richardson of Collins was the guest of honor at a banquet sponsored by the Story County Medical Society February 20 at the Sheldon-Munn Hotel in Ames. The event was in observance of Dr. Richardson's more than 50 years in the practice of medicine in Iowa, 42 years of which have been spent in Collins.

Dr. Fred Sternagel of West Des Moines spoke on "What Price Security" at a recent Kiwanis meeting in Grinnell.

Dr. J. Stephen Westly, acting chief of the department of internal medicine at the John Moses Memorial Veterans Hospital, Minot, N. D., has become associated with his father, **Dr. Gabriel S. Westly**, in Manly. A 1944 graduate of the SUI College of Medicine, Dr. Westly served his residency at the Veterans Hospital in Des Moines.

MARRIAGE ANNOUNCEMENT

Miss Lois Marie Hansen and **Dr. Edward A. Hanske** of Des Moines, were married January 27 at the St. Ambrose Cathedral in Des Moines. Dr. Hanske is the son of Mrs. E. A. Hanske and the late Dr. Hanske of Bellevue.

DEATH NOTICES

Dr. Sarah M. F. Griffin, 79, who practiced medicine in Manson for 54 years, died at her home February 28. Dr. Griffin had been in ill health for the past year. Dr. Griffin was graduated from the State University of Iowa College of Homeopathic Medicine at Iowa City in 1897. She was a member of the Calhoun and Iowa State Medical Societies.

Dr. Thomas Franklin Hersch, 63, died suddenly at his home in Cedar Rapids February 12 following a heart attack. Born in Jesup, Dr. Hersch was graduated from the State University of Iowa College of Medicine in 1914. Dr. Hersch was a member of the Linn County and Iowa State Medical Societies.

SUI CONFERENCE ON TREATMENT OF BURNS

A panel discussion of the treatment of burns will be held May 4 and 5 at the College of Medicine in Iowa City. It is sponsored by the Department of Surgery in cooperation with the Advisory Committee on Health and Medical Services of the Civil Defense Committee of the State of Iowa.

The treatment of thermal burns will be considered from a standpoint of the acute wound, the immediate and delayed physiologic changes in the body, infection, the nutritional state, the eschar and the plastic repair of the burned area.

The conference is open to Iowa physicians and there will be no registration fee.

MEDICAL ROLE IN CIVILIAN DEFENSE MEETING

A Conference Course on the medical role in civilian defense for County Medical Directors of Health Services will be held at the College of Medicine, Iowa City on April 6 and 7 beginning at 9 a. m. each day. No registration fee will be charged. Attendance will be limited to 50 persons and applications should be made to Dr. M. E. Barnes, Head, Department of Hygiene and Preventive Medicine, College of Medicine, Iowa City.

IOWA MEDICAL SERVICE MEETING

The annual meeting of the members (participating physicians) of Iowa Medical Service (Blue Shield) will be held April 23 at 4:15 p.m. in the municipal auditorium at Sioux City. The meeting will begin following the close of the annual meeting.

MARTIN I. OLSEN, M.D.,
President.

ROSTER OF IOWA PHYSICIANS
IN MILITARY SERVICE

As of March 15, 1951

Ackerman, J. H., Clarksville
(Hot Springs, Ark.) U.S.P.H.S.
Alberts, M. E., Des Moines
(Des Moines) Lt. (jg) U.S.N.R.
Allen, M. B., Fort Dodge
(Fort Riley, Kan.) Capt., A.U.S.
Bartholomew, R. D., Lake City
(Oakland, Calif.) U. S. N. R.
Bartley, R. L., Sully (Pensacola, Fla.) U.S.N.R.
Benge, D. K., Dows
Bliss, W. R., Ames (Chicago, Ill.) Capt., A.U.S.
Camp, J. R., Thompson (San Diego, Calif.) .. U.S.N.R.
Carson, R. W., Winterset
(Camp Stoneman, Calif.) A. U. S.
Coyne, K. M., Burlington
(FPO San Francisco, Calif.) Cmdr., U.S.N.R.
Dalager, R. D., Ottumwa (Junction City, Kan.) A.U.S.
Davidson, M. C.,
(APO New York, N. Y.) Lt. Col., A.U.S.
Fitch, R. E., Des Moines (Des Moines) 1st Lt., U.S.A.F.
From, Paul, Des Moines
(Lackland Field, Texas) 1st Lt., A.U.S.
Goenne, W. C., Jr., Davenport
(Tacoma, Wash) Major, A.U.S.
Johnson, F. N., Madrid
(San Antonio, Texas) 1st Lt., A.U.S.
Johnson, M. H., Iowa City
(Tacoma, Wash.) Capt., A.U.S.
Keil, P. G., Des Moines (Des Moines) U.S.A.F.
King, R. E., Des Moines (Camp Polk, La.) Capt., A.U.S.
Kurth, R. J., Waterloo
Krause, R. E., Ottumwa
Landis, S. N., Des Moines (Olathe, Kan.) Maj., U.S.A.F.
McCrary, W. A., Lake City
(Fort Riley, Kan.) 1st Lt., A.U.S.
Mangan, J. T., Forest City (FPO San Francisco, Calif.)
(San Antonio, Texas) 1st Lt., A.U.S.
Montgomery, A. E., Jefferson
(APO San Francisco, Calif.) Lt. Col., A.U.S.
Nordin, C. A., Des Moines
(Lackland Field, Texas) U.S.A.F.
Robb, W. J., Cedar Rapids (San Diego, Calif.) U.S.N.R.
Ruble, R. L., Nevada (Camp Chaffee, Ark.) A.U.S.
Schultz, M. M., Waterloo
(Rapid City, S. D.) Capt., U.S.A.F.
Simonsen, M. H., Sioux City
(Oakland, Calif.) Lt., U.S.N.
Smith, C. B., Iowa City
(Fort Jackson, S. C.) Capt., A.U.S.
Storck, R. D., Dubuque (San Francisco, Calif.) Lt.
Stutsman, R. E., Washington
(San Diego, Calif.) Comdr., U.S.N.
Taylor, H. N., Iowa City
Tempel, P. F., Steamboat Rock
(Fort Riley, Kan.) A.U.S.
Thomas, J. H., Sibley U.S.A.F.
Thornton, T. F., Jr., Waterloo
(Great Lakes, Ill.) Lt., U.S.N.R.
Tice, W. K., Iowa City
(APO San Francisco, Calif.) A.U.S.
Tyler, D. E., Shenandoah
von Lackum, L. F., Oelwein
(Oakland, Calif.) Lt. (jg) U.S.N.R.
Walz, D. V., Le Mars U.S.A.F.
Waldmann, W. B., Council Bluffs
Wehrmacher, W. H., Iowa City
(Oceanside, Calif.) U.S.N.R.
*Wilkins, D. S., Iowa City
(APO San Francisco, Calif.) Capt., A.U.S.
Woolfolk, J. H., II., Waterloo (Weaver, S. D.) U.S.A.F.

* Deceased.

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	Term Expires
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George Braunlich, Davenport.....	January 1, 1953
Julian E. McFarland, Ames.....	January 1, 1953

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	Term Expires
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THE JOURNAL

Everett M. George, Editor.....Des Moines

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*Deceased

The JOURNAL

of the

Iowa State Medical Society

Vol. XLI

DES MOINES, IOWA, MAY, 1951

No. 5

PRESIDENT'S ADDRESS*

THOMAS F. THORNTON, M.D.
WATERLOO

As President of your Society I speak to you today concerning the strides made by the medical profession during the past year and also to admonish you to continue the battle in the years to follow.

You are all acquainted with the fact that the medical profession today faces the greatest fight in its history against the forces of socialism, and it is most heartening to me to be able to report that the members of the profession have almost unanimously risen up to combat the inherent evils present in compulsory national health insurance.

It behooves me at this time to review the progress we have made throughout the preceding year.

First and primarily, physicians all over the United States have experienced a profound political awakening—an awareness that they could do something individually and collectively to help stem the tide. On November 7, 1950, the result of our hard work was shown to us and was gratifying indeed, not only here in Iowa, but in all parts of the nation.

Medical men throughout the country banded together, donating large quantities of time, money and hard work with the result that most candidates for office who had previously tended favorably toward compulsory health insurance felt obliged to renounce it during the campaign. Of those who refused to back down, nearly 90 per cent were defeated at the polls.

Of the eight sponsors of the national compulsory health insurance bill, five were up for reelection and four of them dropped out of the picture. Intense campaigns by doctors helped in the downfall of Senator Elbert Thomas of Utah, Senator Claude Pepper of Florida, Senator Glen Taylor of Idaho and Representative Andrew Biemiller of Milwaukee. Only Representative John D. Dingell of Detroit escaped the doctors' wrath. Three other

(Continued on page 170)

PRESIDENT-ELECT'S ADDRESS*

DONALD C. CONZETT, M.D.
DUBUQUE

In presenting these preinduction remarks, I should like to divide them into two parts. First, the factual down to earth problems with which we must deal these next few days and second, a flight of fancy including a goal toward which we might aim in the incoming year.

As this House convenes, and in my capacity of Speaker, I would ask that all procedures be business-like with deliberations thorough but not verbose. I should like to see the agenda completed with dispatch that we may have ample time to attend what portends to be a splendid meeting. My congratulations to you, Dr. Thornton, for providing a magnificent program.

Toward these ends, I am following the pattern of the AMA House of Delegates and naming Reference Committees to consider all reports of Officers and Committees; of resolutions and of new business if it be of a nature requiring debate. These committees will meet by schedule at times and places which will be made known to the members of the House and of the Society at large. In this way we can accomplish several purposes; namely, valuable time will be saved; a more complete discussion can be had in small groups and most important, all members of the Society may have a voice in discussion, thereby perhaps dispelling a feeling that this House is a politically hand picked group.

These Reference Committees, after careful consideration of all business given them, will report their findings to the House on Wednesday morning for final action. It will then be the duty of the delegates to adopt, approve or disapprove the recommendations of the several committees. With an enlarged membership in the House this year, your Speaker is happy for his successors that at this Session you will elect a Speaker—a professional Parliamentarian, I hope,—to conduct these

(Continued on page 171)

* Presented before the House of Delegates, Iowa State Medical Society, One Hundredth Session, Sioux City, April 23-25, 1951.

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PRESIDENT'S ADDRESS

(Continued from page 169)

sponsors of the bill, Senator James Murray of Montana, Senator Dennis Chavez of New Mexico and Senator Hubert Humphrey of Minnesota, were not up for re-election in 1950.

In addition to these sponsors, the doctors helped terminate the aspirations of other advocates of the bill such as John A. Carroll, who was downed by Senator Eugene D. Millikin in Colorado, Helen Gahagan Douglas, defeated by Richard Nixon in California, Scott Lucas, beaten by Everett M. Dirksen in Illinois, Alex M. Campbell, who failed in Indiana against Senator Capehart, Thomas E. Fairchild who lost to Senator Alexander Wiley in Wisconsin and, of course, Joseph T. Ferguson, whose political hopes were rudely jolted by Senator Taft in Ohio.

Here in Iowa, the issue, although not quite as sharply drawn, was present in the campaign for Senator Hickenlooper's seat in the senate. Albert Loveland campaigned on an uncompromising "fair deal" platform which, by implication, aligned him with the supporters of national compulsory health insurance. The medical men throughout the state aided in re-electing Senator Hickenlooper to office, dispelling any doubts concerning how the doctors of Iowa stood relative to the proposed bill.

In the battle against compulsory national health insurance, doctors everywhere have lined up solidly behind voluntary health insurance. We now realize that our profession is inextricably linked with voluntary health insurance. In the past year enrollment figures in voluntary plans have gone to a new high of over 70 million. Physicians have done much by publicity to point out to the public the wisdom of protecting themselves against the costs of illness.

Dr. John W. Cline, president-elect of the American Medical Association, points out that we can raise the level of health protection offered in three ways:

1. More liberal membership privileges.
2. Full-service benefits for subscribers of modest means.
3. Protection against long-term ills.

All three of these goals will require "collective action on the part of our profession."

One other matter I should like to bring to your attention today is the problem of our medical schools. Dr. Louis H. Bauer, chairman of the board of trustees of the AMA, has aptly stated our position when he stated "that Federal subsidy has come to be a burden, not a bounty."

We are all well aware that the country's medical schools currently operate at a loss of \$10,000,000.00 a year. Fully cognizant of the situation, the AMA has just recently instituted the American Medical Education Foundation. The goal of the foundation is the wiping out of medical school deficits and, as an impetus toward attaining that end, the AMA has contributed \$500,000.00 to the foundation in the

hope that the interest of physicians throughout the United States will be stimulated to support the undertaking. It is reported that since the initial AMA contribution, pledges have already poured in from various sources, including pharmaceutical companies, medical publishers, equipment manufacturers and the like.

But the problem is, first and primarily, one for the doctors to solve. The foundation is being administered by medical men and the funds are to be unrestricted; that is, each recipient medical school is free to determine how it best can use its share to further the training of its students. The individual contributor is free to control the dispersal of his donation, if he so chooses, by earmarking the particular school to which his money is to be sent. It has been suggested that if each physician makes an annual contribution of \$100.00, the medical school books will more than balance. Dr. George F. Lull, Secretary and general manager of the AMA, speaking about the Foundation, states optimistically, "the baby is going to grow into a giant."

Having set up the American Medical Education Foundation, it is now the doctor's obligation to see that funds are available for its successful functioning. First response to the plan is said to be most satisfactory. An editorial entitled "Formation of the American Medical Education Foundation" appeared in the January 20 issue of the *Journal of the American Medical Association*, and states: "It is urged that each physician consider an annual contribution of \$100.00. When a physician feels that this amount is beyond his means, smaller contributions will be welcome, but the profession must recognize that substantial sums are required and that token contributions alone will not be sufficient."

"The American Medical Association has indicated its belief that the possibilities of securing adequate support for medical education from voluntary sources are far from exhausted. To prove this, actions as well as words are required. The challenge has now been placed squarely before the medical profession."

The plan is already a popular one and has met with the overwhelming approval of not only doctors, but of thinking people everywhere. I cannot urge too strongly that each county medical society develop plans to reach every doctor in its area in order that all may understand the merit of such an undertaking. If such a campaign is made, the Foundation, which must not fail, cannot fail.

When viewed as a whole, it would appear that in the past year events have begun to turn in our favor. We cannot sit back, however, with the attitude that the battle is won, because it is not. The government attack on medicine is on many fronts and even now there is planning and plotting by federal Socialists behind the scenes. For those of us who are inclined to become complacent, we need only to recall the post-election glow of 1946. Let us

not retrogress to the mental and physical lethargy of those days.

To those of us who feel it is not the physician's place to indulge in these protective measures and that we can safely intrust our welfare to the professional politicians, let me say emphatically that we cannot, nor are we obliged to do so. Let me quote from the opinion of the Honorable Claude McCulloch, United States District Judge for Oregon, in the case of the United States of America versus The Oregon State Medical Society. Justice McCulloch, in approval of the fight being waged by the medical profession, says: "Can it be that a profession must remain a sitting duck while socialism overwhelms it? I would not expect an American court to hold that."

Finally, there may be some who feel that our stand against Socialism is unwarranted—that it just does not matter. To those, I quote again in closing from Judge McCulloch's opinion where he sets forth this stern warning:

"The World Revolution that we hear about allows no place for the professions . . . principle, dignity, the efforts of the ages to create an aristocracy of intellect—these are to be destroyed in the interest of 'the common man.'

"He will be 'common' indeed without professions in the society which he is to rule."

PRESIDENT-ELECT'S ADDRESS

(Continued from page 169)

procedures in future years. It should be a welcome relief from the succession of us amateurs whom you have named President-elect.

The past year or two have in many respects been repugnant to us as doctors. Notably individualists, we were loathe to become politicians, businessmen, insurance brokers, publicity directors—even, procurement officers! Nonetheless, the socializers made us realize that such avocations were a necessity if we were to continue as a free and independent profession. It is unnecessary to relate what was accomplished—self back-patting is not a pretty gesture. However, what the profession did was to arouse a tremendous revolt among the laity, who, sparked by our initiative, placed us in a temporarily more secure position. This fact, plus the international crisis, has detracted the efforts of the proponents of socialization of medicine.

But all of these extracurricular obligations have taken their toll in the thinking and in the being of a physician. He has become hardened by unjust criticism; calloused by fallacious propaganda; hurt by the continued efforts to throttle a profession by class legislation—a profession whose origin was based on service.

When then is the answer? It would seem to me that perhaps in this highly mechanized world we of the medical profession have unconsciously geared

ourselves too high. That in the whirl of so called advancement we have become too much the businessman pushing buttons; the automaton making stereotyped gestures and actions rather than the doctor concerned with the ills of his individual patient. The Hippocratic Oath, archaic of course and considerably outmoded, has, nonetheless, phraseology and meaning which we, each and every one, would do well to review. I quote in part: "I will keep pure and holy both my life and my art. In whatsoever houses I enter, I will enter to help the sick, and I will abstain from all intentional wrong-doing and harm. And whatsoever I shall see or hear in the course of my profession in my intercourse with men, if it be what should not be published abroad, I will never divulge, holding such things to be holy secrets."

The strict adherence to these principles is in a large measure the reason our predecessors were revered. It is my thoughtful opinion, that by applying that sacred and privileged patient-physician relationship to our every day procedures, wherein we exert more influence than pastor or priest, judge or teacher, we will again attain the pinnacle of respect from which we have unquestionably slipped; and this sliding in public opinion, due to our enforced preoccupations.

Well and good you may say; so we have re-established ourselves as paragons of virtue. But what of the future? Here may I interpolate my flight of fancy? If we again revert to Hippocrates you will recall that in that era and for many centuries thereafter, the teaching of the young physician was entirely by preceptorship. I am not sufficiently naive to recommend the complete return to such a regime. Nonetheless, our medical schools of today have become monumental edifices all too often housing an almost omnipresent faculty. The practicing physician has lost his sense of obligation toward teaching the student, in fact, he has been deprived of any opportunity to teach should he have the desire. It would be my guess that less than five per cent of the physicians today are engaged in any instructional endeavor, other than perhaps an occasional class for nurses.

Our own State University, with a full time staff, is a prime offender against my thesis. Yet situated at the roots of rural living as compared to metropolitan schools, our State school has an unrivaled opportunity to create general practitioners, the physicians who deal directly with the patient.

We cannot justly criticize a faculty, by necessity composed of specialists, if it alone does not do the job. But we as a Society, comprised predominately by general practitioners, can toss them a lively challenge. It is this—in the senior year, for a period of six months, place a boy with a doctor; to work with him, live and eat with him, and thus intimately to learn how to cope with the type of people he eventually will serve. The State Society if given the opportunity can supply the doctors, and these doctors will be individualists of the type who will

instill in the student the fundamentals of free enterprise, of honorable practice and of honest living. Will you join me in the promotion of this flight of fancy?

DISSECTING ANEURYSM OF THE AORTA

HOWARD J. HARTMAN, M.D.

AND

HERBERT SHULMAN, M.D.,

WATERLOO

THE following two cases are reported to illustrate the protean manifestation of dissecting aneurysm of the aorta. Both were diagnosed ante-mortem and presented interesting clinical features. Although it is not the purpose of the authors to review the literature covering this subject, a brief summary is included. Dissecting aneurysm of the aorta was first described in 1761¹ and named by Laennec² in 1819. Swaine and Latham³ in 1855 made the first correct ante-mortem diagnosis. It occurs in all age groups, but chiefly from 40 to 70. The youngest case described was 14 months⁴ and the oldest 100 years.⁵ The incidence, as stated by Moersch and Sayre⁶ in a recent report, is about one of every 400 or 500 post-mortem examinations. They listed the etiological factors as follows: degenerative, congenital, mechanical, inflammatory and traumatic. To these should be added pregnancy, as brought out by the reports of Schnitker and Bayer⁷ and McGeachy and Paullin.⁸ Bauersfeld,⁹ in his excellent review of the subject, presented 15 cases. He outlines the pathogenesis as follows: as a result of medial disease there is a rupture of the vasa vasorum with the formation of a medial hematoma, which splits the wall. This ultimately breaks through the intima, producing a defect through which blood can enter and dissect. Usually the dissection is centrifugal, occasionally centripetal. The dissection may take one of the three courses:

1. Progressive and involve the entire aorta then rupture back into the lumen.

2. Progress for a variable distance and cease.

3. Rupture through the adventitia into the pericardial pleural and abdominal cavities. This is most common and occurs in 80 to 90 per cent of cases. The signs and symptoms are variable. The sudden onset of pain has been emphasized by nearly all observers. It is intense, and frequently as in one of our cases, is in the back between the scapulae. Syncope may be present as reported below. Other findings may include an elevation of a previously normal or elevated blood pressure, shortness of breath, pallor, an increase in heart size and the finding of new heart murmurs, especially diastolic murmurs over the base. There is usually leucocytosis and mild anemia. X-ray of the chest may reveal a widened aortic shadow. The electrocardiogram does not indicate myocardial infarction, and this is extremely helpful in differential diagnosis. An exception to this occurs where the coronary ostia are involved by the dissecting process. Lastly, the

signs and symptoms resulting from encroachment of the dissecting process on the lumina of the various blood vessels arising from the aorta are striking and as seen in one of the cases below of diagnostic importance. Early and definitive diagnosis may be of life-saving significance as illustrated by the case of Golden and Weens¹⁰ where angiocardiology helped establish the diagnosis. The patient was operated and a cellophane sheath sutured around 70 to 90 per cent of the aortic circumference in all accessible areas. The following two cases are reported:

Mr. E. P., age 59, became ill suddenly on December 16, 1949 with a severe pain in the mid upper abdomen radiating into the back between the shoulder blades. He required morphine to obtain relief. He felt well for 24 hours when he experienced a second similar attack. His blood pressure varied from 170/110 to 190/115. The pulse remained good, the heart sounds were normal and the rest of the physical examination was not remarkable. He was admitted to the hospital on December 18, 1949. Examination at this time revealed a flushed face and slight cyanosis of the lips. There was tenderness over the right lumbar area and dullness at the left lung base. Laboratory findings were as follows: red blood count, 4,860,000 and white blood count 20,850 with 92 per cent polys and 8 per cent lymphs. The urine showed a trace of albumin. The sedimentation rate was 36 mm. The non-protein nitrogen was 53.5 and creatinine 2.8. A flat plate of the abdomen was not remarkable. A chest x-ray revealed some increased density above the right diaphragm and a partial atelectasis of the left lower lobe. The upper mediastinal shadow was wide. There was marked cardiac enlargement. An electrocardiogram taken on December 19 showed changes consistent with coronary sclerosis. The hospital course was characterized by attacks of pain in the back occurring at intervals of four to eight hours relieved by a quarter grain of morphine or 100 mgm. of Demerol. On December 20 the blood pressure rose to 230/140, the heart tones remained of good quality and no murmurs were heard. On December 22 he expired abruptly during a paroxysm of pain. The patient's past history revealed a known hypertension from 1947, ranging from 175/125 to 205/140. The diagnosis of dissecting aneurysm was made on December 20.

A post-mortem examination was done six hours after death by Dr. John J. Rowe, Cedar Falls. The following significant findings were noted: exposure of the peritoneal cavity revealed a large irregular area of hemorrhagic extravasation present retro-peritoneally posterior to the hepatic flexure of the colon. Further hemorrhagic extravasate was along the left inferior base of the mesentery extending to the pelvic brim. The left pleural cavity was found to contain about 3,000 cc. of blood clot and serum. There was massive hemorrhage apparent in the mediastinum with a focus of perforation into the pleural cavity just above the aortic diaphragmatic hiatus. Examination of the peri-

cardial cavity revealed hemorrhagic extravasation apparent into the soft tissue about the base. The mediastinal structures were obscured by a massive hemorrhagic extravasation. The aorta was of a dark red dilated appearance from the terminal portion of the arch downward. The heart appeared enlarged. The coronary arteries were tortuous and exhibited foci of atherosclerotic thickening. The lumina were patent throughout, although encroached upon by the focal sclerosis. Dissection of the heart from right to left along the direction of circulatory flow failed to show noteworthy gross abnormality of chambers or valvular structures. The left ventricular myocardium measured 15 mm. in thickness. The coronary ostia were widely patent. Section of the aorta revealed massive hemorrhage into the media and between the media and adventitia extending from above the level of the origin of the left subclavian to the bifurcation. A transverse rent was present in the intima just above the diaphragm in the same location as the outer mediastinal rupture. The aortic intima displayed prominent atherosclerotic plaquing and scattered atheromatous ulcers were present.

Mrs. D. M., age 61, was admitted to the hospital as an emergency on September 13, 1949. She was a known hypertensive of at least five years duration, and in October, 1947, blood pressure readings were 196/136 right, 180/126 left. The heart was moderately enlarged with the enlargement chiefly left ventricular. Fairly marked aortitis was noted at that time. There were no murmurs. The aortic second sound was accentuated. She got along fairly well until September 13, 1949, when she rather abruptly noted a tight unpleasant feeling in the neck anteriorly. She vomited and fainted. Immediate hospitalization was carried out, and when seen in the hospital at 9:30 A.M. the patient appeared critically ill. She was conscious but extremely apprehensive and appeared pallid. Blood pressure in the right arm was noted to be 90/70. The heart tones were of poor quality. Thirty minutes later her condition appeared worse and the blood pressure in the right arm was 60/?. She complained of pains in the chest anteriorly and of some pain in the back. At this time it was noted that the pulse in the right arm differed markedly from that in the left. The pulse in the left arm was of good quality with a rate of 58. The pulse in the right arm was imperceptible. Blood pressure reading taken in both arms revealed blood pressure of 120/80 left, 60/? right. The right side of the face was noted to be cold objectively and subjectively.

The diagnosis of aortic dissecting aneurysm was made. She was started on oxygen immediately and a unit of plasma was begun. She was digitalized with Crystodigin intravenously and given a grain of papaverine intravenously. Repeated examinations during this time continued to reveal the discrepancy of blood pressure readings in the two arms and the difference in the pulses, otherwise the physical examination was not remarkable. The right arm was noted to be cooler than the left arm.

The heart tones were distant and there were no murmurs. A few rales were noted at both lung bases. An electrocardiogram was taken at 6 P.M. on the day of admission. This revealed changes consistent with myocardial degeneration. Another tracing taken 48 hours later again showed no evidence of myocardial infarction but rather non-specific changes. The patient improved somewhat after 48 hours but then gradually began to fail. There were signs of marked pulmonary congestion and abdominal distention. Anuria appeared on the fifth hospital day. Laboratory studies on admission revealed: red blood count, 4,100,000, white blood count 17,400, hemoglobin 13 gms. and essentially normal differential. There was a trace of albumin in the urine and the sedimentation rate was 36 mm. A blood count three days after admission showed 3,600,000 red cells and 11.6 gms. hemoglobin; the white count was 15,750 with 91 per cent polys; nonprotein nitrogen and creatinine were 57.5 and 2.8 respectively. On the sixth day after admission the patient expired.

A post-mortem examination was performed eight hours after death by Dr. J. J. Rowe. Grossly the heart was moderately enlarged and of a flabby consistency. The epicardial surface was everywhere dulled by a thin layer of fibrinous material. This effect was present over the intrapericardial portions of the aorta and pulmonary artery. No noteworthy gross change was encountered in the valvular orifices and leaflets. The left ventricular cavity appeared moderately enlarged and the ventricular wall measured about 15 mm. in thickness. The coronary ostia were adequately patent. The section along the coronary vessels revealed a lumen of adequate caliber throughout. Scattered foci of atherosclerosis were noted. The aorta was found to be dilated from the ascending portion to the point of bifurcation. There was a dark bluish coloration of the wall from an area about 2.5 cm. from its origin to its termination. This section revealed a focus of intimal perforation about 2 cm. above the aortic valve in the right posterolateral aspect. From this point on there was splitting of the wall through two layers by massive hemorrhagic dissection. Similar splitting was observed in the wall of the innominate artery with marked compression of the lumen. Slight dissection was apparent about the origin of the left common carotid and left subclavian arteries without noteworthy change in caliber. The left renal artery showed similar change with moderate compressing effect. The hemorrhagic extravasation ceased abruptly with the bifurcation of the aorta. There was moderate atherosclerotic plaquing along the aorta more marked in the upper portion. The lungs revealed scattered areas of moderately firm character in all lobes and the intervening tissue was of doughy consistency. A section of the lung parenchyma was accompanied by the outpouring of a large amount of fluid. Microscopic examination of the aorta revealed a broad inner band of musculoelastic tissue which was separated from an outer

zone of similar tissue by a wide expanse of blood clot. Beyond the outer muscular strip there was a loose edematous areolar tissue which was diffusely infiltrated by lymphocytes, large mononuclear and some plasma cells.

SUMMARY

- 1. Two cases of dissecting aneurysm of the aorta diagnosed ante-mortem are presented.
- 2. A brief review of the subject is included.

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LONGEVITY STUDIES

LENGTH OF LIFE AND THE AGED POPULATION IN IOWA

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AND

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CHEROKEE

INTRODUCTION

BOTH LONGEVITY and the percentage of population aged 65 and over are high in the State of Iowa. Map 1 shows the distribution (1948) of the elderly and the percentage in each state of the United States. This map is based on estimates "derived from published and unpublished materials fur-

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nished by the Bureau of the Census and the National Office of Vital Statistics and have had the benefit of critical review by the Bureau of the Census."¹

The average percentage of individuals over 65 years of age in the United States in 1948 has been estimated to be 7.6.* In Iowa it is 9.9. In this respect Iowa is second only to Vermont, where the percentage is 10.0, only slightly higher. The following eight states have percentages above 9.0:

Vermont	10.0
Iowa	9.9
New Hampshire	9.9
Missouri	9.8
Nebraska	9.4
Maine	9.3
Kansas	9.1
Massachusetts	9.1

These states are concentrated in two areas: New England and the Middle West. The states within each group are close neighbors. Within its group of neighbor states, Iowa is at the top of the list.

MIGRATION

In the majority of the eight states referred to above, the factor of migration must be taken into account. Loss of population through migration affects primarily the younger age groups and automatically increases the ratio of the elderly population. But not all of the eight states mentioned suffered a loss of population through migration. That the ratio of elderly is not greatly affected by a moderate migration in either direction is shown by the fact that in New Hampshire and Massachusetts migration increased the population in 1948 by 5,000 and 96,000 respectively. On the other hand, there was an 11.5 per cent migration from Kentucky, where the elderly population was only 7.5 per cent. The 2.2 per cent net migration to Massachusetts did not affect the 9.1 per cent ratio of elderly in that state.⁴ Population gain or loss from migration affects the ratio of the elderly only when it is marked. In Montana, for example, migration losses in 1948 were as high as 17.2 per cent⁴—

* In July, 1948, the total population in the United States was estimated to be 146,113,000; the total aged population, 10,940,000.^{4, 5}

TABLE 1

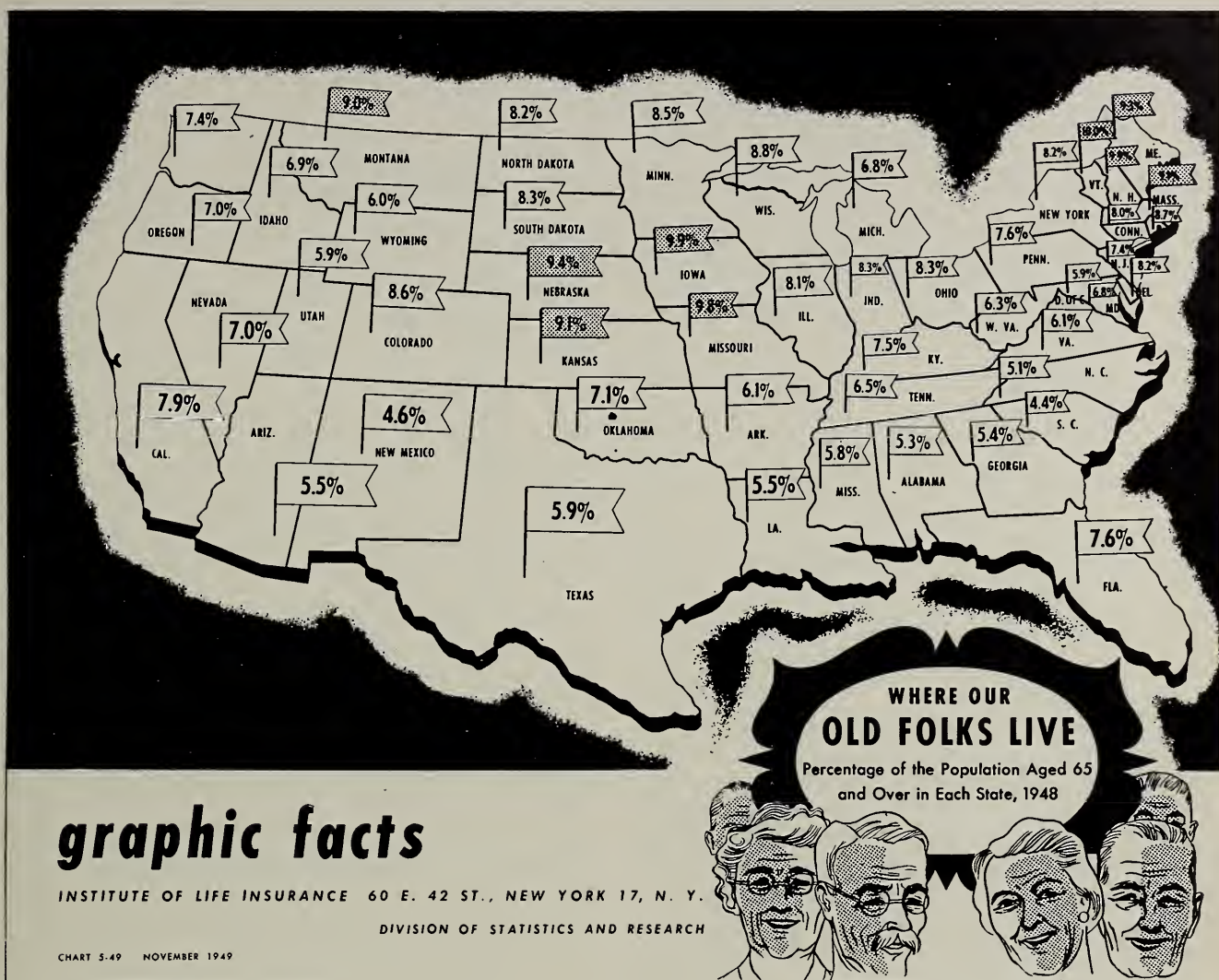
Number of inhabitants, 1948 (estimate) and 1950 (census); increase or decrease as compared with 1940 (census); migration, 1940-1948 (estimate); percentage of decrease due to migration, four New England states, Kentucky, and Iowa.

STATES	1948*		1950**		1948*	
	Number of inhabitants	% of increase or decrease 1940-1948	Number of inhabitants	% of increase or decrease 1940-1950	Net migration 1940-1948	% of decrease 1940-1948
Four New England States..	2,517,000		2,616,659		— 45,000	— 1.8
Maine 895,000..		+5.9		+ 7.9		
New Hampshire 520,000..		+6.0		+ 8.5		
Vermont 363,000..		+1.1		+ 5.2		
Rhode Island 739,000..		+4.4		+11.0		
Kentucky	2,829,000	—0.4	2,944,806	+ 3.5	—362,000	—12.4
Iowa	2,612,000	+2.9	2,621,073	+ 3.3	—118,000	— 4.5

* Source: Current Population Reports, Bureau of Census, Washington, D. C., August 5, 1949, Series P-25, No. 26.

**Source: The Des Moines Register and The New York Times, November 3, 1950.

MAP 1

Percentage of the population aged 65 and over in each state, 1948.^{2, 3}

almost one-fifth of the population. Because a decrease in population of this magnitude might result in increasing the percentage of elderly, Montana was not included in our comparative studies. Although Iowa, an agricultural state, lost 118,000 persons—4.5 per cent of its population—through migration during the period 1940 through 1948 (Table 1), this percentage, as shown in the table, does not significantly affect the final figures.

PURPOSE AND METHODS

The purpose of this paper is to present a report of a study of longevity in Iowa from the medical and statistical angles. The states mentioned below were selected for comparison for the following reasons:

(1) Four New England states, Maine, New Hampshire, Vermont and Rhode Island, were chosen because (a) the percentage of the elderly in their populations is equal or close to the percentage of elderly in Iowa; (b) the population of Iowa is approximately equal to the combined population of the four New England states. (Individual

income is slightly higher in Iowa than in New England.)

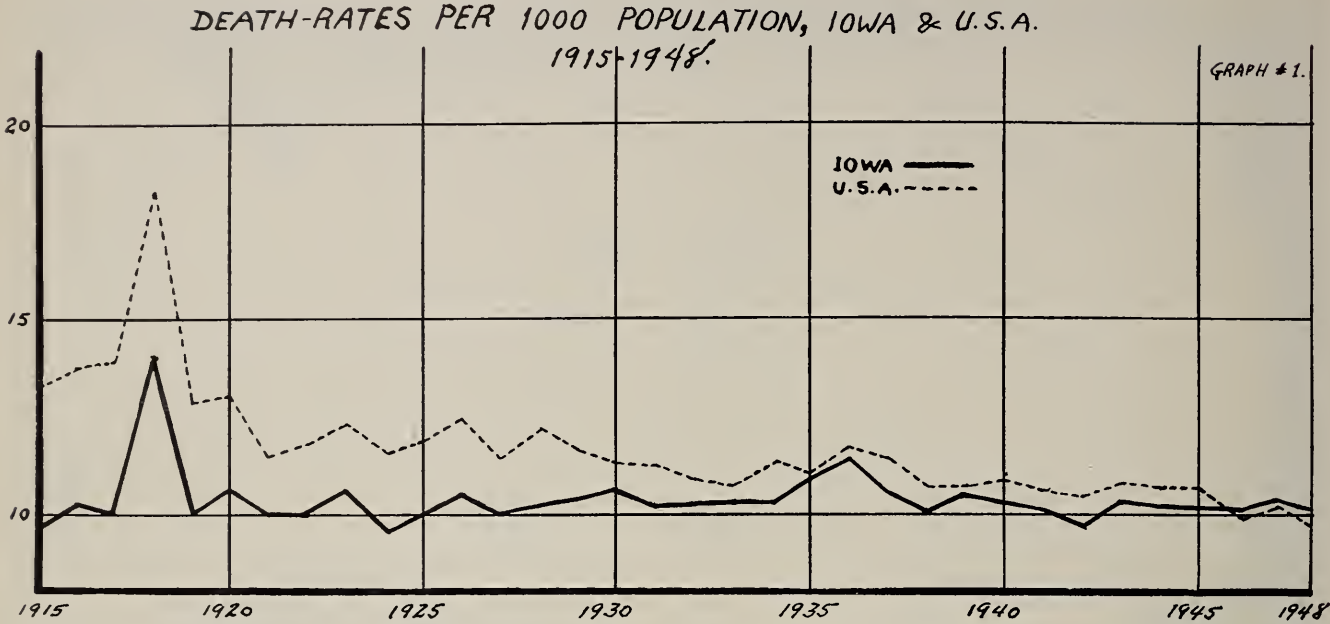
(2) Kentucky was chosen because its population is approximately the same as that of Iowa; the percentage of elderly in the population, however, is close to the average for the United States as a whole. We were aware that the social-economic structure of the population differs from that of the Iowa population and that individual income is substantially lower than in Iowa.

(3) In Iowa, as well as in Kentucky and the four New England states as a whole, there has been the movement of population to other parts of the United States. Despite emigration, however, there has been a net increase of population in the four New England states as well as in Iowa and Kentucky.

Massachusetts and Connecticut were excluded because the former is dominated by the large industrial city of Boston, and the latter is going through a period of intensive industrialization. There has been an increase of population in these states because of immigration, especially in Connecticut.

GRAPH 1

Death rates in Iowa and in the United States from 1915-1948.



Source: Vital Statistics of the United States and of the State of Iowa.^{8, 9}

Data for Iowa have also been compared with the national average.

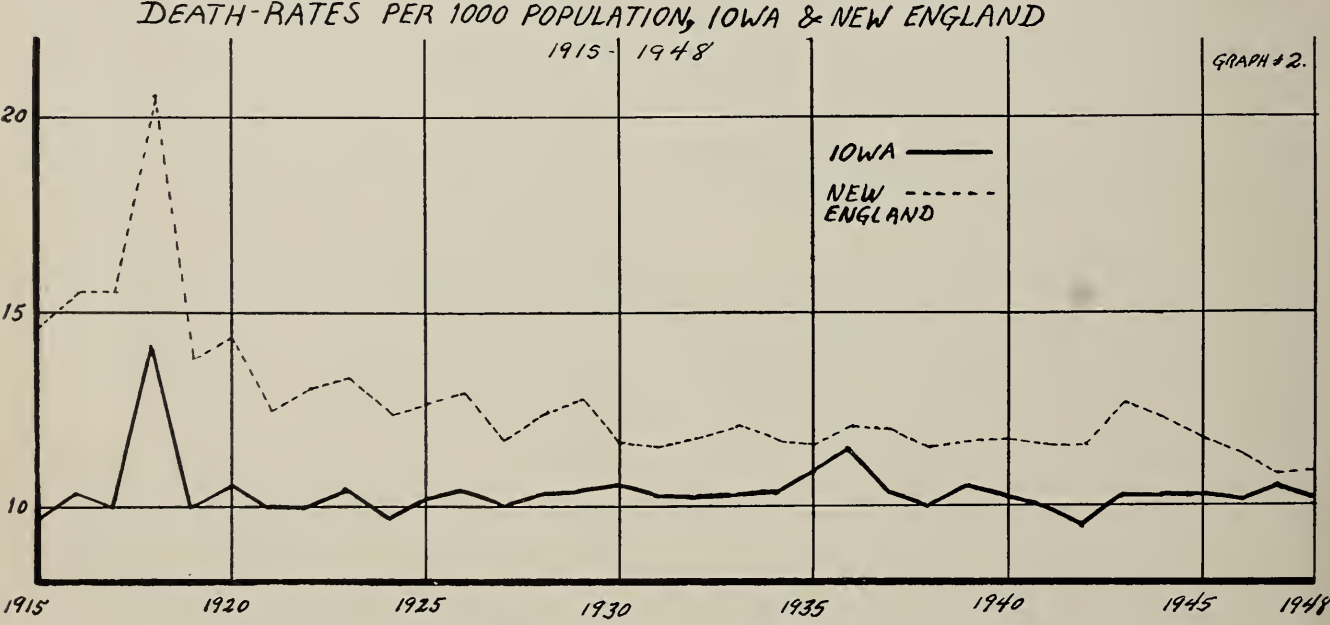
Table 1, which reviews the leading non-medical data (number of inhabitants, percentage of increase since 1940 and migration) for the four New England states, Kentucky and Iowa, shows that the figure of loss of population through migration in Iowa is closer to that of the four New England states than to that of Kentucky.

The figures used are estimates of the Bureau of Census for 1948. Where available, figures of the

1950 census have been presented for purposes of comparison; 1950 census figures were obtained from newspaper reports. In order to rule out the possibility of typographical errors, reports from two newspapers, the *Des Moines Register* and the *New York Times*, were compared. In the study of medical factors, vital statistics reports were utilized. As to the accuracy of the vital statistics, it should be noted that two types of data were studied: (1) crude death rates, infant mortality, stillbirths, number of inhabitants, migration data, etc., which are

GRAPH 2

Death rates in Iowa and in New England from 1915-1948.



Source: Vital Statistics of the United States and of the State of Iowa.^{8, 9}

figures based on facts as to which there can be almost no differences of opinion as to classification; (2) registration of diseases as causes of death, such as tuberculosis, diseases of the heart, intracranial hemorrhages, nephritis, etc. Diagnosis of causes of death are rarely confirmed by autopsy,

TABLE 2

Expectation of life per 1,000 among white males and white females at ages 0 and 40, in eleven states and the United States (average), 1939-1941.

State	Expectation of life, years		White female	
	White male	White male	Age 0	Age 40
	Age 0	Age 40	Age 0	Age 40
Nebraska	66.25	32.51	70.04	35.14
Iowa	65.81	32.18	69.70	34.89
Connecticut	64.00	29.71	68.19	32.76
Missouri	63.50	30.84	67.82	34.08
New Hampshire	63.48	30.09	67.54	33.18
Rhode Island	63.31	29.04	67.36	32.19
Massachusetts	63.25	29.30	67.62	32.55
Vermont	63.05	30.07	66.99	32.95
UNITED STATES (average)	62.81	30.03	67.29	33.25
Maine	62.62	30.63	66.44	33.12
Kentucky	61.57	31.00	65.62	33.38
Arizona	56.83	27.93	63.74	33.58

Source: Dublin and associates, "Length of Life," Table 19, p. 68.^{6, 7}

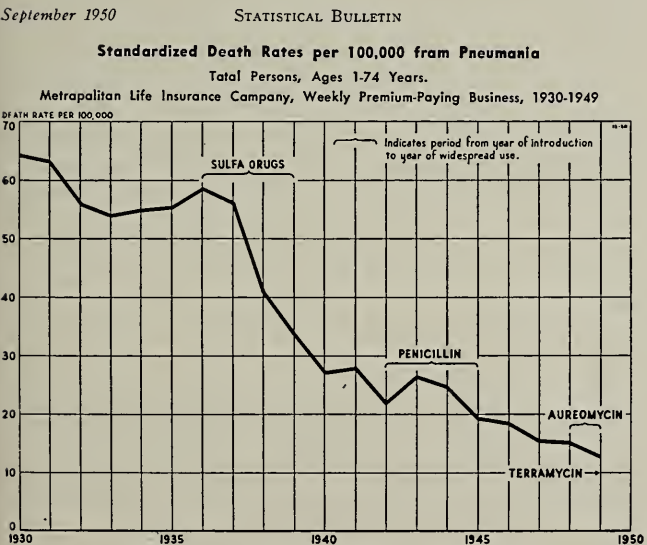
and the possibility of error is great. We feel, however, that possible errors do not substantially affect the general trends.

LIFE EXPECTANCY IN IOWA IN 1939-1941⁷

In the Regional Life Tables (1939-1941), published in 1948, the State of Iowa appears near the

GRAPH 3

Standardized death rates per 100,000 from pneumonia.



Source: Statistical Bulletin, Metropolitan Life Insurance Company.¹⁰

top. Although first place is occupied by Nebraska, the difference between Nebraska and Iowa is small—only 0.44 and 0.33 in white male and 0.34 and 0.25 in white female life expectancy at birth and at age 40, respectively. Life expectancy in Iowa, however, was three years higher than in the country as a

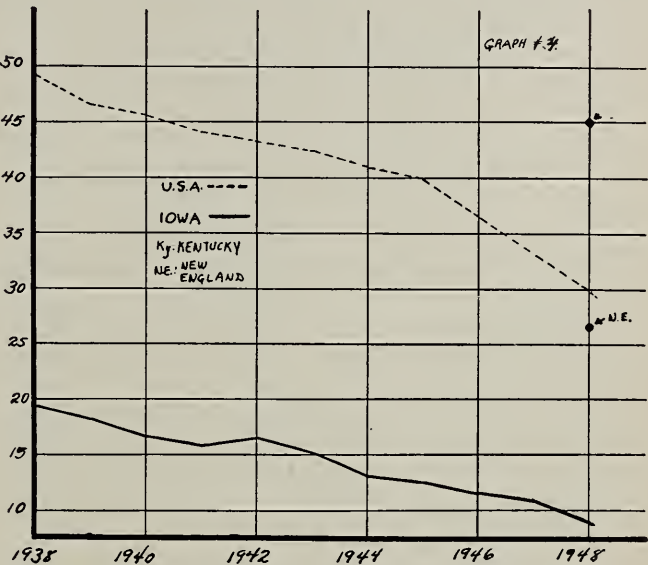
whole and almost nine years higher than in Arizona, the state with the lowest life expectancy. The figures are given in Table 2:

MORTALITY RATES

That mortality rates in Iowa are low is clearly demonstrated in Graphs 1 and 2. Mortality rates were low in Iowa 35 years ago.

GRAPH 4

Tuberculosis (1938-1948) in Iowa, United States (average), Kentucky and New England; rates per 100,000 population.



Source: Vital Statistics of the United States and of the State of Iowa.^{8, 9}

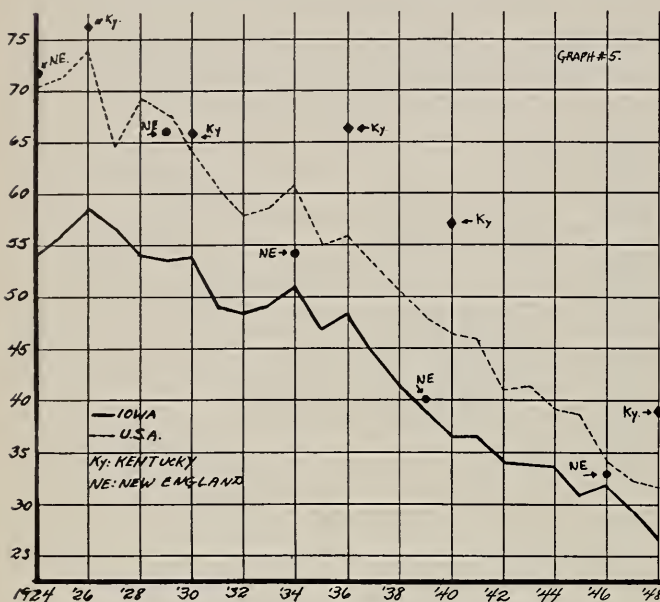
Whereas the curve for New England runs slightly higher than that for the United States, the Iowa curve is lower until 1945; after that year the Iowa curve is slightly higher than that for the United States. The following striking facts should be noted: in 1915, death rates in Iowa were already substantially lower than in the United States and in New England, and of course lower than in Kentucky. Whereas the curves for the United States, and Kentucky tend to decline, the Iowa curve runs without substantial change; there is an element of stability in the curve, which differs distinctly from those of the other states and the United States as a whole. Since 1915, no serious epidemics have occurred. The only epidemic was the influenza epidemic in 1918, which affected the United States and Iowa alike. But infectious diseases, such as scarlet fever, diphtheria, septicemia, puerperal fever, and last but not least, pneumonia, took their tolls. In 1915 and 1916 the United States death rate from pneumonia and influenza was as high as 145.9 and 163.5 per 100,000, respectively. In those two years pneumonia was third in the list of causes of death. We are gradually forgetting how critically ill pneumonia patients were at that time. To refresh the memory, we present Graph 3, which shows that the real break in the death rate

from pneumonia occurred during the period 1935 to 1942.

It should be pointed out that Graph 3 relates to the standardized death rate for policyholders ages

GRAPH 5

Infant mortality rates, by place of occurrence: United States, Iowa, New England, Kentucky. Deaths under one year per 1,000 live births.



Source: Vital Statistics of the United States and of the State of Iowa.^{8, 9}

1 to 74 of the Metropolitan Life Insurance Company rather than to the crude pneumonia death rate.

That infectious disease rates are low in Iowa is demonstrated by the curve of tuberculosis shown in Graph 4. The curve is substantially lower than that for the United States, New England and Kentucky.

INFANT MORTALITY RATES

Not only death rates in general, but infant mortality has been low in Iowa. Although low in 1915, it was still lower in 1948 as compared with the rate for the United States as a whole and for Kentucky. The gap is smaller in 1948 than it was in 1915, however. Infant mortality rates in Iowa are among the lowest in the country. (Graph 5.)

STILLBIRTHS

Incidence of stillbirths in Iowa is as low as infant mortality and crude death rates. The figures show the same trends as those for the United States as a whole. They were low 25 years ago and are still low—lower than in Kentucky, New England and other states.

MATERNAL MORTALITY

Maternal mortality in Iowa was low in 1933 and is low at the present time. Deaths per 1,000 live births were 5.3 in 1933 as compared with a 6.2 average for the United States. They were 0.7 in 1948 and 0.6 in 1949. With a rate of 0.6, Iowa, together

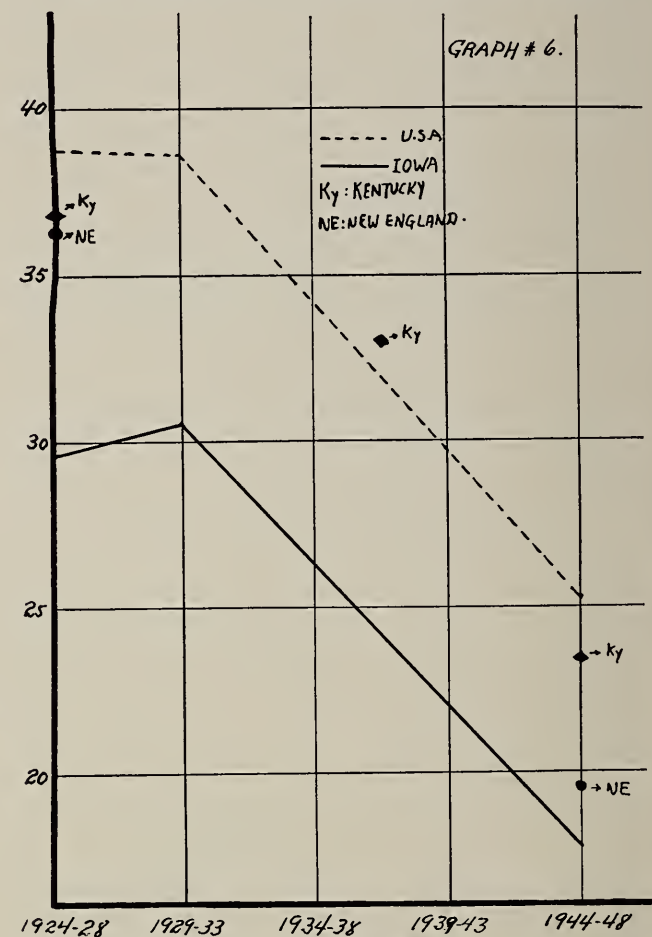
with Connecticut, the District of Columbia, Massachusetts, Michigan, Ohio, Oregon, South Dakota and Wisconsin, follows closely the states of Utah, Vermont and Wyoming, which have only slightly lower maternal mortality rates. Iowa is far ahead of Mississippi, which has a maternal mortality rate of 2.2, the highest in the country.¹¹

DEATH RATES IN UPPER AGE GROUPS

The incidence of death among individuals 65 years of age and over is much higher in Iowa than in the United States as a whole and in Kentucky and is slightly higher than in New England. We note in the Statistical Report for 1948 of the Division of Vital Statistics of the State of Iowa: "That

GRAPH 6

Stillbirth ratios by place of occurrence, per 1,000 live births, in Iowa, United States (average), New England and Kentucky, 1924-1948.



Source: Vital Statistics of the United States and of the State of Iowa.^{8, 9}

deaths in Iowa tend to concentrate in the upper age groups is evident by the fact that the median age of persons who died in Iowa in 1948 was 70.7 years. In other words, slightly over 50 per cent of all the persons who die in Iowa are more than 70 years old."⁹ In Iowa 62.16 per cent of the deaths occur at the age of 65 or over. In New England the percentage is about 60.5 and in the United States as a whole, 50.50. The corresponding figure

TABLE 3

Percentage of deaths of individuals 65 years and over in Iowa, compared with 4 New England states (Maine, New Hampshire, Vermont, Rhode Island), Kentucky and the United States (average), 1948.

Age Group	Iowa	4 New England states		Kentucky		United States (average)	
			More or less than in Iowa		More or less than in Iowa		More or less than in Iowa
65-69	10.51	11.56	+1.05	9.54	— 0.97	11.04	+ 0.53
70-79	27.05	28.20	+1.15	22.98	— 4.07	23.18	— 3.87
80-89	20.90	17.64	—3.26	14.38	— 6.52	13.89	— 7.01
90 and over	3.70	3.12	—0.58	2.52	— 1.18	2.39	— 1.31
TOTAL	62.16	60.52	—1.64	49.42	—12.74	50.50	—11.66

Source: Vital Statistics of the United States, 1948, Part II, Washington, D. C., 1950. Based on Tables pp. 27, 28, 31, 32, 37, 52, 71, 160, 236, 296, 304, 312, 352, 392, 416.¹²

for Kentucky is 49.42. In other words, the number of deaths in Iowa that occur at age 65 and over are more than 1.5 per cent greater than in New England and more than 12 per cent greater than in the United States as a whole or in Kentucky. (Table 3.)

Moreover, the older the age group, the higher the ratio of elderly deaths in Iowa and the lower the ratio in other states and the United States as a whole. The number of deaths in the age group 65 to 79 in Iowa is approximately two per cent less than in New England; in the group 80 years old and over, however, the number is almost four per cent more than in New England. (Table 4.)

DEATHS FROM SELECTED CAUSES

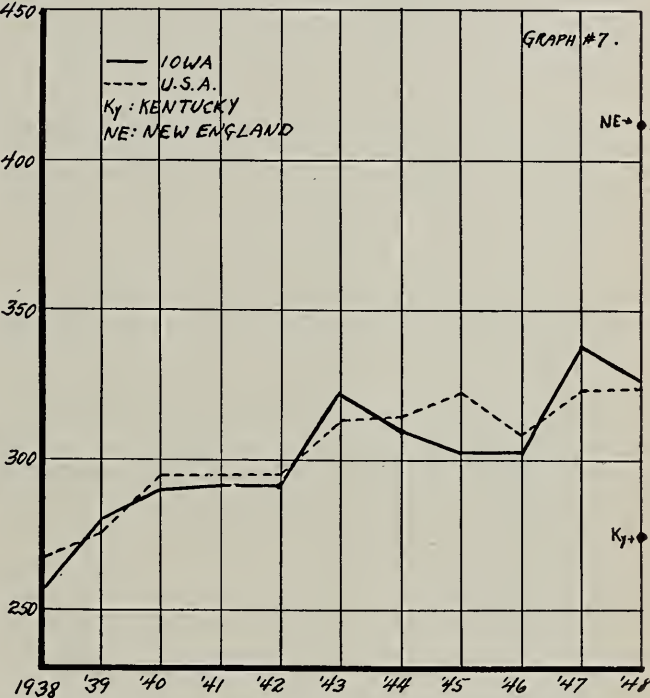
Almost one-half of the deaths occurring today in this country are from arteriosclerotic or other vascular diseases. Statistical figures do not give a clear-cut picture as far as arteriosclerosis is concerned, and we had no other choice therefore than to consider diseases of the heart as predominantly arteriosclerotic diseases, recognizing, however, that part of these deaths are caused by congenital lesions, rheumatic and other non-arteriosclerotic diseases. For the purposes of this paper, figures on diseases of the heart during the last 11 years were studied and the figures for these and other arteriosclerotic diseases for the year 1948 are presented. (Graph 7 and Table 5.)

The incidence of diseases of the heart follows a rather unusual trend in Iowa. In contrast to many other curves, this one appears to resemble to a great degree that of the United States average. In New England, incidence of diseases of the heart appears to be higher. Table 5 gives further clarification on this point.

The percentages of deaths from predominantly arteriosclerotic diseases (cerebral, cardial and re-

GRAPH 7

Diseases of the heart. Death rates per 100,000 population in Iowa and the United States (average), 1938-1948.



Source: Vital Statistics of the United States and of the State of Iowa.^{8, 9}

nal) in New England and Iowa differ from that of the United States average. For New England and Iowa the percentages are, respectively, 50.6 and 49.4, and for the United States, 47.1. The frequency of arteriosclerosis appears to be higher in regions with numerous elderly populations. It is lower in Kentucky (44.1).

Graph 8 shows death rates from carcinoma in Iowa and the United States as a whole. The carci-

TABLE 4

Percentage of deaths of individuals 80 years and over in Iowa, compared with four New England States (Maine, New Hampshire, Vermont, Rhode Island), Kentucky, and the United States (average), 1948.

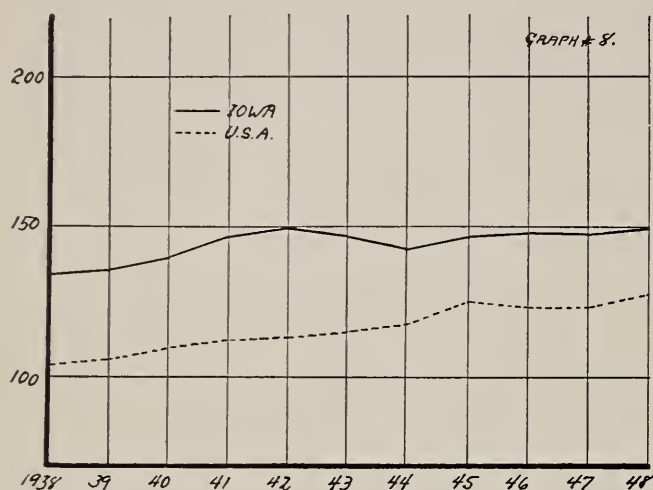
Age group	Iowa	4 New England states		Kentucky		United States (average)	
			More or less than in Iowa		More or less than in Iowa		More or less than in Iowa
80 and over	24.60	20.76	—3.84	16.90	—7.70	16.28	—8.32

Source: Vital Statistics of the United States, 1948, Part II, Washington, D. C., 1950. Based on Tables pp. 27, 28, 31, 32, 37, 52, 71, 160, 236, 296, 304, 312, 352, 392, 416.¹²

noma death figures are slightly higher in Iowa than in the United States (average).

GRAPH 8

Deaths from cancer. Rates per 100,000 population in Iowa and the United States (average), 1938-1948.



Source: Vital Statistics of the United States and of the State of Iowa.^{8, 9}

COMMENT

Iowa heads the list of states with high percentages of elderly population. It has been shown that in the United States there are two centers of high longevity and high ratios of advanced age groups. These two centers are the Middle West, with the four neighbor states of Iowa, Missouri, Kansas and Nebraska in a leading position; and New England, where the three leading states are Maine, Vermont and New Hampshire. The two groups resemble each other in many respects, but there are some distinctions.

As to death rates: the death rate in Iowa has always been low. It was less than 10 per 1,000 population in 1915. The respective figures for 1915 for Kentucky, the United States as a whole and New England were 12.1, 13.2 and 14.7. The majority of deaths in Iowa occur among individuals 65 years of age and over. In 1948, the respective figures for Iowa, the four New England states (taken together), the United States (average) and Kentucky are 62.16, 60.52, 50.50 and 49.42 per cent, Iowa showing the highest incidence in this older age group. The ratio of deaths among persons 80 years of age and over is even more significant. The respective figures for Iowa, the four New England states, Kentucky and the United States (average) were 24.60, 20.76, 16.90 and 16.28. Deaths among individuals 80 years of age and over in Iowa are comparatively greater than in any of the above mentioned states and in the United States as a whole. In Iowa almost one-fourth of the deaths occur among persons 80 years of age and over, in New England approximately one-fifth and in Kentucky and in the United States (average), one-sixth.

As to causes of death: the percentage of deaths

from arteriosclerosis, as well as from carcinoma, is higher in Iowa as compared with the United States average. The higher percentage of deaths from carcinoma and arteriosclerosis may be fairly well explained by the fact that both these diseases occur more frequently in advanced life, and the fact that the ratio of elderly population is higher in Iowa than in other parts of the United States. In other words, the incidence of arteriosclerosis is higher in Iowa and New England because people live longer and die at a later age here than elsewhere in the United States. This fact demonstrates clearly that deaths, or at least the age at death, only partly depend on the diseases which finally lead to death. Timely death depends also on another factor which obviously counteracts the pathological, or non-physiological,* cause of death. At a meeting in 1948 of the "Club of Research of Ageing," Simms said, "People do not die from aging only. Most adults die as a result of disease to which they have become more susceptible as a result of aging."¹⁴ Simms and Stieglitz agreed that "most adults die of disease aggravated by the accumulation of injuries."¹⁵

Our studies indicate that the factor which counteracts the destructive qualities of disease was present in Iowa long before people reached advanced life and long before they began to benefit from the achievements of contemporary medicine.

TABLE 5

Crude death rates per 100,000 population and percentage of deaths from predominantly arteriosclerotic diseases (intracranial lesions of vascular origin, diseases of the heart and nephritis), 1948.

States	Total death rates	Deaths from predominantly arteriosclerotic diseases				Percentage of deaths
		Intracranial lesions of vascular origin	Diseases of the heart	Nephritis	Total	
Four New England states (Maine, New Hampshire, Vermont, Rhode Island)	1,129.1	107.3	404.9	59.3	571.5	50.6
Iowa	997.9	113.3	329.4	50.0	492.7	49.4
Kentucky	982.1	97.3	274.8	60.8	432.9	44.1
UNITED STATES (average)	988.5	89.7	322.7	53.0	465.4	47.1

Source: Vital Statistics of the United States, 1948, Part I, pp. 22-23.⁸

Infant mortality was always low in Iowa. Statistics show that in 1924, Iowa was a state with a low infant mortality rate (Graph 5). Today, Iowa occupies one of the first places among states with low infant mortality rates. In 1948, Iowa was in third place, following closely the two states with the lowest infant mortality rate, the District of Columbia and Oregon. The respective figures for the District of Columbia, Oregon and Iowa were

* By physiological death we mean death from old age rather than from disease.¹³

23.9,* 25.8 and 26.7, with the United States average 32.

Stillbirth rates present almost the same picture: Iowa occupies ninth place, but follows closely upon the first eight states. The state of Washington was first, with a rate of 13.9 stillbirths per 1,000 live births. In Iowa the rate was 15.2 (only 1.3 more) as compared with the United States average of 23.5, 8.3 higher than in Iowa; in New England and Kentucky the respective figures were 17.9 and 19.0.

There is the same regularity in maternal mortality. Iowa tops the list of low maternal death rates in the United States.

Low infant mortality, low stillbirth rates, low maternal mortality and high mortality in the upper age groups indicate that (1) children and members of middle age groups as well as the elderly are more resistant to disease than the population in many other parts of the country; (2) the elderly live longer despite the fact that arteriosclerosis and cancer do not occur less frequently than in the United States as a whole and in New England.

The last 100 years have been years of great discoveries and unparalleled achievements in medicine. Death rates have decreased steadily. The death rate in the United States decreased from over 13 per 1,000 in 1915, to below 10 in 1948. The corresponding figures for New England were approximately 15 and 11. In Iowa, however, there has been almost no change in the death rate as compared with 1915. It was about 10 at that time and remained so in 1948.

Usually socio-economic, climatic, cultural and other exogenic factors are considered responsible for such regularity. That this explanation is not really adequate is shown by a comparison of Iowa with its neighbor state, Missouri. In both states there is a high percentage of elderly, 9.9 and 9.8 respectively (Map 1). Individual income is almost the same in each state. The socio-economic structure, however, differs in many respects. There are no large cities in Iowa; the largest, Des Moines, has a population of slightly less than 200,000. In Missouri, on the other hand, there are two large cities, St. Louis and Kansas City, whose combined population, including the suburban population, is close to 2,000,000. Whereas Iowa is predominantly rural, urban influences in Missouri are strong. Iowa has a homogeneous population. In 1948, the percentage of non-white individuals among the deaths in Iowa did not exceed one per cent. In Missouri, however, it was 10 per cent. Iowa is surrounded by states with a high percentage of elderly (Map 1). Missouri, however, borders on the north, west and partly on the east states with a high percentage of elderly population (Kansas, Nebraska, Iowa and Illinois); to the south and southeast it borders Tennessee, with 6.5 and Arkansas, with 6.1 per cent of elderly population. The factors which dominate

the demographic picture of Missouri are not those common to the Southern Belt, but those common to Iowa, Kansas and Nebraska. Missouri is far ahead of Tennessee and Arkansas and, with Vermont, Iowa and New Hampshire, tops the list of states with the highest percentage of elderly in population.

It is obvious that environmental (socio-economic) and climatic conditions, considered separately or together, do not adequately explain the high percentage of elderly in the population and the greater longevity in these areas.

An endogenic factor, rooted in somatic or perhaps, the psychic and somatic, structure of an individual, whether acting with others or independently of them, appears to be significant in longevity and, consequently, in the occurrence of a higher percentage of elderly population in this part of the United States. This factor includes, apparently, components of varying origin. These might be: (1) factors of biological immunity contributing to a higher resistance to disease or better immunity toward infection; (2) hereditary and constitutional factors which counteract the process of premature aging; (3) the psychological structure of an individual which makes for better adaptability to environmental conditions and diminution of strain, thus decreasing the destructive power of the "wear and tear" features and (4) other aspects of human life.

We classify the factor as a biological one which counteracts shortening of life and preserves or helps to preserve an individual from early aging. We believe that exploration of this factor in Iowa as well as some of its neighbor states offers new opportunities for gerontological research and for geriatric practice. The conditions for this appear to be especially favorable in Iowa, with its rather homogeneous population and its more or less homogeneous socio-economic and climatic conditions. Iowa's future contribution to longevity as well as other aspects of advanced life promises to be of utmost importance.

SUMMARY

1. Iowa, Vermont and New Hampshire head the list of states with a high percentage (close to 10.0) of elderly population.
2. It has been demonstrated that migration from Iowa affects the final figures only slightly, and that other factors are responsible for both greater longevity and a high percentage of elderly.
3. Crude death rates have been low in Iowa for at least the last 35 years; infant mortality, stillbirths and maternal deaths were lower than in a large majority of other states.
4. The ratio of elderly among the deaths was higher in Iowa than in other parts of the United States. In 1948 almost 25 per cent of deaths in Iowa occurred among persons 80 years of age and over, more than 50 per cent among persons over 70 and more than 62 per cent among persons over 65.
5. Arteriosclerosis and carcinoma, chief causes

* This figure is low for this region as compared with 1947, 1946 and 1945. The respective figures were 30.9, and 35.5 and 45.3.⁸

of death in the United States at present, are at least as frequent in Iowa as in other parts of the United States.

6. People in Iowa live longer. They die, however, of the same causes as people in other states.

7. It is believed that Iowa offers new opportunities for gerontological studies and geriatric observation. Implementation of such studies is advocated.

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OSTEOPOROSIS, A REVIEW

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THIS subject is reviewed at this time to gain a better understanding of its etiology and earlier manifestations. With growing interest in medical disorders of the skeleton, osteoporosis will be recognized more often before boney structures are grossly decalcified, and before the vertebral bodies and hip bones are seriously damaged. This will tend to spare our elders no little pain and disability and favor a better life for all.

The term "osteoporosis" may be defined as a decrease in bone density, primarily due to various conditions which interfere with matrix formation. It chiefly involves the spine and occurs most often after menopause, in senility, in Cushing's syndrome and as a result of disuse.

No recent writer has ventured to estimate the frequency of this condition, except to state that its most common form, postmenopausal osteoporosis, could be found in about ten per cent of all women past the age of 50.¹

ETIOLOGY

It is generally agreed that this condition is a clinical entity and not a mere atrophy of senility.

* Revision of a paper presented at the Annual Regional Meeting of the American College of Physicians, Des Moines, Iowa, October 9, 1948.

The following etiologic concepts are commonly accepted: in order to understand them one must view bone as a changing tissue in which bone forming cells, the osteoblasts, are continually building a protein matrix, wherein a calcium-phosphorus-carbonate salt is embedded. At the same time, but on different surfaces, there occurs an equal, continual resorption of all bone elements.

Three basic causes of defective bone matrix formation are described:² lack of stress and strain, protein deficiency and steroidal imbalance.

Lack of stress and strain deprives the osteoblasts of the many stimuli that come with ordinary activity. This lack is more liable to occur in the chronically ill and in the elderly obese person. It has become more common in later years because of the number of elderly persons being crowded into nursing homes and government institutions, thus giving them little chance to move about. The effects of disuse may be superimposed on other forms of bone atrophy. It probably is a factor in the osteoporosis associated with the adaptation syndrome of Selye.³ It is most obvious during immobilization of a large part of the skeleton, especially of young persons.

Of the various dietary deficiencies, only that of protein and vitamin C are believed to be important causes of osteoporosis. A shortage of protein for optimal matrix formation is a factor in most forms. It is common in conditions in which the serum albumin is low, such as starvation, malnutrition and nephrosis. The excessive conversion of protein into carbohydrate for use as energy, accounts for the osteoporosis associated with stress, hyperthyroidism and long standing, poorly controlled cases of diabetes mellitus.⁴ Since vitamin C is also necessary for matrix formation, its deficiency may cause or play a part in other forms of osteoporosis.

The involvement of steroids in the pathogenesis of postmenopausal osteoporosis became apparent to Albright and associates⁵ in 1940 when they were studying the effects of estradiol in three women with this condition. They noted that it lessened their pain and improved their general condition. It reduced the fecal and urinary excretion of calcium and phosphorus. On the basis of this and subsequent studies, the influence of steroids on bone formation was described as follows:²

1. Steroids which promote protein anabolism and stimulate osteoblasts, such as estrogens, testosterone and the androgenic steroids of the adrenal cortex.

2. Steroids which inhibit protein anabolism and depress the osteoblasts, such as the glucosteroids of the adrenal cortex.

Normally the effects of the two groups on bone metabolism is balanced. When they become unbalanced in such a way that group 2 is more active, osteoporosis may result. The following imbalances are believed to occur in the more common forms:

The menopausal form is held to be due to the lack of the stimulating effects of estrogens on ma-

trix formation. Since this occurs as well in the greater number of postmenopausal women who do not develop osteoporosis, some additional disturbances must be present. The same estrogen lack with resultant bone atrophy occurs secondary to panhypopituitarism.

The osteoporosis which begins after age 65 is designated "senile" and is said to be due to the withdrawal of all remaining androgens. Some atrophy of disuse and senility is associated.

The form associated with Cushing's syndrome, with the adaptation syndrome of Selye, and that which occurs in response to excessive adrenocorticotrophic hormone, is due to excessive glucosteroids of the adrenal cortex.

Patients with acromegaly commonly show a mild bone atrophy, probably due to secondary hypogonadism.

The presence of osteoporosis in patients with hyperthyroidism was noted to be related to the duration, rather than the severity of the latter condition.⁶ The prolonged use of protein to meet increased energy requirements eventually weakens the matrix. This is supported by Kinsell⁷ who showed that the use of testosterone in thyrotoxicosis improved the calcium and nitrogen balance.

Osteoporosis is common in patients with diabetes mellitus who have been poorly controlled over long periods. In 1934 Root and associates⁸ expressed the opinion that this was due to excessive use and excretion of calcium to neutralize chronic acidosis. As previously stated, it is now believed that the use of protein for energy purposes also is a factor.

The term "idiopathic osteoporosis" is used in referring to rare cases with features similar to those of the postmenopausal and senile types, but which occur in young persons without evidence of hypogonadism.

The primary matrix deficiency of osteoporosis causes secondary disorders in calcium and phosphorus metabolism. This is seen in the excessive excretion of these substances and its correction by steroid therapy. Further evidence was noted in the improvement of patients who received large supplements of calcium, phosphorus and vitamin D.⁹

MANIFESTATIONS

There may be no clinical signs of a significant degree of osteoporosis. More often the patient first complains of weakness, anorexia and many aches, particularly of the back and hips. A history of renal colic may be obtained. During examination a general tenderness likely will be noticed. X-ray studies at this time show some diminished opacity of the vertebral bodies. The patient with advanced osteoporosis, usually a woman past 60 years, often seeks aid because of acute severe pain in the lower or mid-portion of the back. This is made worse while she is upright. Some radiation of pain to the trunk, pelvis or lower extremities may be described. Such a pain picture often begins suddenly while the patient is lifting in a stooped position or follow-

ing some trivial jolt, fall or mis-step. The examiner will note acute tenderness of some of the spinous processes, most often the twelfth dorsal and the first lumbar, with muscle spasm and probably some kyphosis. Evidence of shortening of the spine may be noted. Signs of cord injury rarely are found. Roentgen examination usually verifies the diagnosis of compression fracture of one or more vertebral bodies. Those of the dorsal region result in a wedge shape deformity, while those in the lumbar region tend to show a general crushing. By this time the density of the vertebral bodies may be so little that only their faint outline can be seen on the films. Their opposing surfaces are concave, more so in the lumbar region. Porosis is less severe in the cervical bodies, pelvis and upper femurs. The extremities are involved only in severe cases. The skull and lamina dura are not affected. Less often a fracture of the femur occurs. Of a group of 168 cases of fractures of the hip reported by Freyberg and Levy,¹⁰ 121 were elderly women in whom obesity and osteoporosis were frequent.

Laboratory values are as follows:

Blood: Serum calcium usually is normal but may be high when a large part of the skeleton is immobilized. Serum phosphorus tend to be near the upper limits of normal. Serum alkaline phosphatase is normal but may be elevated because of associated osteomalacia. Serum protein and the albumin/globulin ratio are normal.

Urine: Calcium and phosphorus excretions are elevated during active phases of decalcification, but are normal or lower when the involved bone is largely decalcified. Urine nitrogen values are increased but tend to drop during steroid therapy.

Feces: Fecal excretions of calcium and phosphorus parallel those of the urine.

Other systemic disorders characterized by too little calcified bone are differentiated on the basis of the following features: if there is decalcification in hyperparathyroidism it is truly generalized and non-homogenous due to multiple tumors and cysts of the bone. At the same time the serum calcium is high, the serum phosphorus low and the alkaline phosphatase high. Urine calcium excretion remains high even when decalcification of the skeleton is severe. Osteomalacia always is associated with a low combined total of serum calcium and phosphorus and usually an elevated alkaline phosphatase. The urine calcium usually is normal or low. Non-systemic disorders of the spine may resemble osteoporosis. Metastatic malignancy of the spine may show only a uniform, diffuse porosis. Differentiation may depend on finding a primary tumor. Multiple myeloma may present a similar problem with a homogeneous atrophy of the skull, ribs, spine and pelvis. The serum globulin and erythrocyte sedimentation rate are high. Bence-Jones proteinuria occurs in about 50 per cent of the cases. The demonstration of myeloma cells in smears of a sternal biopsy may be the sole means of diagnosing a rare case.

TREATMENT

Relief of acute symptoms due to fracture may be the presenting problem. Analgesics may be needed. Shock is common. A known or latent heart weakness, nephritis, diabetes or other defects often will precipitate a crisis which demands prompt and skilled attention. Cases of compression fracture of the vertebral body without injury to the cord and neural arch, occurring in the aged, were successfully treated by two or three weeks of unsupported bed rest, followed by weight bearing in a light brace or corset.¹¹

An adequate diet with generous portions of lean meat, fruits and vegetables plays a basic part. A high normal intake of calcium and phosphorus is advised to correct negative balances and to decrease normal bone resorption. About 10,000 units of vitamin D daily are given to correct any deficiency. Since some persons do not readily absorb fats, this is best given in water soluble propylene glycol. An ample intake of vitamin C is made certain. Cereals and fats are forever limited since they interfere with calcium absorption and tend toward obesity.

Serious efforts should be made to avoid the habitual use of laxatives since they too hinder calcium absorption.

The medical treatment of osteoporosis consists of the use of estrogens and some form of androgens, given according to plans recommended by Albright and associates:⁴

In the treatment of the postmenopausal form combined therapy is favored, such as the use of conjugated equine estrogens, 0.625 to 1.25 mg. two to three times a day and methyltestosterone, 10 mg. once a day. Estrogens are administered for years if not for life, to women who show a strong tendency to this condition. When used continuously, metropathia and hemorrhage are common. Hence they are given intermittently, omitting them every fourth or fifth week during which time withdrawal bleeding is expected. Bleeding at any other time is considered to be due to malignancy or excessive dosage. Servinghaus¹² expressed the opinion that therapeutic doses of estrogens probably do not initiate cancers, yet they might cause a cancer of the female sex organs to grow faster. Because of this, these organs should be examined before and every six months during estrogen therapy. Testosterone is given continuously for at least six months. The use of the propionate in amounts over 200 mg. per month⁴ or the use of methyltestosterone in amounts over 300 mg. per month¹³ may cause masculinizing effects. Sodium retention with edema may occur in elderly patients during the use of sex steroids, especially testosterone. However, moderate doses, as previously mentioned, do not produce this. If the edema can not be controlled by means of salt restriction, the amount should be reduced.

The results of combined sex steroid therapy usually were apparent within a few weeks or months. The general well being of their patients was much improved. Pain in the spine and other bones often

was completely relieved. This occurred years before any evidence of increased bone density. Further results were noted in laboratory studies. Decreases in urinary calcium and phosphorus excretions usually were noted within six days. Significant decreases in urinary nitrogen followed the use of testosterone.

Steroidal treatment of other forms of osteoporosis is essentially as outlined for the postmenopausal form. It was noted that the use of testosterone in old men required a close watch of the prostate for enlargement. Estrogen should be given at the same time. There is no effective treatment known for the idiopathic form of osteoporosis.

COMMENT

The treatment of osteoporosis can be simplified considerably by earlier diagnosis. At this time the condition too often is diagnosed by means of the x-ray, despite evidence that about one-third of the bone density must be lost before any changes can be recognized. Furthermore, the roentgenologist's opinion often is not sought until the patient presents the acute manifestations of fracture of the spine or hip. An earlier diagnosis is facilitated by the routine use of the Sulkowitch test for urine calcium in the study of those past midlife. The presence of hypercalciuria which persists during two to three days of low calcium intake may be due to osteoporosis, hyperparathyroidism, renal acidosis and idiopathic hypercalcemia.⁴ Osteoporosis is presumed to be present if no renal failure, stones and urinary tract infection are present; and if the urine calcium excretion decreases during ten days of sex steroid therapy as previously described. The diagnosis of an early case may be verified by demonstrating normal values for serum calcium, phosphorus and alkaline phosphatase.

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MEDICAL EDUCATION IN TIME OF NATIONAL EMERGENCY*

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I HAVE NO hesitancy in discussing the subject of medical education in time of national emergency with this group because I know that practicing physicians are deeply concerned about medical education. And with good reason. Medical schools can make no claim to the exclusive right to teach the science and art of medicine. In recent years the hospital has assumed a larger and larger responsibility for medical education with the expansion of the internship and residency program. Every physician who works in a hospital has a greater or lesser responsibility as a medical teacher.

The physician who is in practice has come to regard the medical school as something more than an institution where he received his basic training. He looks to it as a complex scientific and clinical laboratory where the most important advances in medicine are made. The physician knows that it is the source of newer knowledge which will help him in his practice.

He looks also to the medical school for younger men and women who will help him carry the increasingly heavy load of practice. The time has long passed when those in practice became concerned about the young physician who hangs up his shingle for the first time. Rather, they are acutely aware that the shortage of physicians is a genuine one and one which affects them directly.

The average citizen, too, is interested in medical education. He has become interested as a result of his experience with the physician shortage during World War II. Since then he has become impressed by the difficulty experienced by his son or daughter in admission to a medical school. The press has kept him well informed about recent advances in medicine and he has taken a keen interest in the great debate over the matter of compulsory health insurance.

The public is particularly concerned with the problem of medical education at this time because it is one of the areas which has a critical effect upon our national strength. The public is sensitive to the whole problem of shortages as a result of its experience during the last war. Shortage in the field of medical care can and does have serious implications for everyone.

And finally the Armed Forces are vitally concerned with the problems of medical education. No one recognizes more clearly than they the need for adequate medical manpower if this country is to develop an armed force of the proportions currently estimated necessary for the defense of our country. The military group is aware now, more than ever before, that they are competing

directly with the civilian population for the physician's services and that the needs of both groups must be carefully weighed.

The resources of our nation with respect to medical service are limited. If we use more physicians than we train we are bound to take them from some useful area. In some ways it is like a big sponge which one can squeeze. It is possible to squeeze and squeeze until all the medical service possible has been extracted. This is what we did in World War II. Doctors were squeezed out of civilian practice to a degree that left the general population in a precarious condition. Doctors were squeezed out of the faculties of the medical schools, out of the hospital staffs, out of the training programs. Even the most promising candidates for admission to medical school were squeezed out of college and into the armed forces.

This policy dealt a severe blow to our medical schools and if the war had continued much longer it might well have been a tragic situation. The quality of the premedical students toward the end of the war was not comparable to that prior to the war (which is not to say that there were no good students admitted—that would be grossly unfair to many of the students who were educated during wartime and immediately after). But taken as a group, it was not a good group and as a result many schools were graduating classes that were 30 to 40 per cent smaller than the usual quota due to a high failure rate. During the emergency faculties were tremendously depleted; they were called into the medical services and in many cases only the older men, many of whom were not in good health, were permitted to remain. Faculties were asked to teach around the calendar. As soon as they got through with one class in came another group. There was no time to catch a breath, no time to evaluate the teaching program and no time to do research. The internships were reduced to a nine month period, so that the men who had only 36 months in medical school and perhaps 18 months in college were reduced further in their clinical experience. The residency training program was cut back sharply not only in numbers but in total length of time as well.

Now as we approach another period of national emergency, as we begin to mobilize once again, the specter of this situation to which I have just referred, looms up and there is great apprehension lest we go back to the old situation and do this all over again.

I believe, however, there are some distinct differences between the situation of World War II and the situation now. The armed forces have made a good deal of progress in acquainting themselves with the problems of medical education. They have sent representatives to every meeting of the Association of American Medical Colleges and of the Council on Medical Education and Hospitals of the AMA. They have inaugurated basic science courses at the Army Medical School. They have developed a program to train specialists who will

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remain in the regular organization. They have a realistic concept of the nature of modern medical education both in its complexity and in its scope.

Several years ago I saw a mimeographed copy of a speech that General Bliss, Surgeon General of the Army, gave before the general staff in 1947. This was an interim period when each member of the general staff was presenting to the rest of the group the special problems of his own branch. General Bliss laid out the problems of the medical corps and did not try to gloss over them. He discussed in great detail the mistakes which had been made—the premature call up of medical officers, the failure to rotate officers from field assignments, the poor use made of special skills, the failure to continue the training of specialists in civilian hospitals. I have a great deal of confidence in a man who can stand up and say he has made a mistake and state what he is going to do to rectify the errors and prevent their recurrence.

A newly formed committee, the Joint Committee of the American Association of Medical Colleges and the Council on Medical Education of the American Medical Association, has prepared a report on Medical Education in Time of National Emergency. This has been presented to the National Security Resources Board. The Joint Committee has made certain specific recommendations which I believe will form the basis on which medical education will be patterned during this emergency.

First, this group has asked that there be an adequate supply of premedical students; this I think we are going to get. Selective service is cooperating well to provide the necessary deferments. The committee has asked that the premedical program not be reduced below 90 semester hours or three academic years and that the medical schools rather than the military services be permitted to designate those students who are going to receive medical training. They have indicated that they would like to see every student who is deferred in order to receive medical training be obligated, after he is graduated, to serve a period of time in the Armed Forces or in some federal agency as directed.

They have recommended that there be a reorganization of medical curriculum to emphasize adequately those subjects which are of particular importance to the national health and welfare. They have recommended that the medical schools use every effort to increase the output of physicians. They have requested that there be set up some method of replenishing and maintaining the faculties during the period of emergency. Faculty members do retire, they do die and there needs to be a source of replenishment.

They have requested that there be not less than 12 months devoted to the internship period. They have requested that there be a continuation of an active residency program. Finally, they have requested that there be adequate provision for graduate training for men and women in the basic sciences who will be the teachers of these subjects in the medical schools.

It has been my privilege to be chairman of a sub-committee of this Joint Committee to make recommendations regarding changes in curriculum during the time of national emergency. The recommendations that we have made deal with specific phases of medicine such as atomic medicine, bacteriological aspects of warfare and chemical warfare. In addition, civil defense organization, aviation medicine, public health and preventive medicine including particularly sanitation in tropic diseases, physical medicine and rehabilitation, traumatic medicine and surgery and the neuropsychiatric aspects of modern warfare are considered.

The curriculum committee has recommended that the basic principles of medicine related to these topics receive emphasis rather than the technical aspects which will be outdated in a short time. It has suggested that the medical schools integrate into their own basic science programs those things which are fundamental in the subjects that I have just outlined and that the teachers use illustrations drawn from experience in civilian defense and combat warfare in order to emphasize their importance. Basically there is no difference in the fundamental aspects of medicine during the time of peace and during the time of war.

There is a good deal of apprehension on the part of medical educators lest the increasing rate of mobilization suggest that the medical schools be operated again on an accelerated basis. No one is concerned that the schools will have to be open the entire year or that students be taught during a 12 month period instead of a 9 month term. The concern is with the kind of training a student can get in a 36 month period. He can certainly learn the factual material but it is highly doubtful whether he can acquire the degree of maturity and experience one would wish to see in a young man with an M.D. degree.

There are a number of things that suggest themselves as suitable for inclusion in the curriculum in order to use a 48 month period efficiently. Many schools have already expanded the clerkship program to include the summer between the third and fourth year. The material described above as being especially pertinent to the medical curriculum in time of national emergency would require about two and one-half months of additional time. And finally it would be feasible to release the students for a 10 week basic military training program of the type that is now given to R.O.T.C. students.

Many of you here are probably concerned about what is going to happen to the number of interns available. Obviously if there is an increase in the number of students trained during this period there will be an increase in the number of interns. That will be a fortunate thing for the private hospitals, since at the present time, they depend upon the kind of service that only an intern can give. It is possible that if the overall course is reduced to three and one-half years instead of four, and if the total length of internship period is retained at 12

months there will be some increase in the number of available interns.

Everyone who has anything to do with hospital administration today is concerned also with the problem of residencies. At the rate that the residents have been called into active duty recently there is serious doubt in the minds of many as to whether any attention is going to be given to the recommendations of medical educators. There is serious concern as to whether selective service and the advisory committees of the state medical societies who advise the military are going to give adequate consideration to the needs of the hospital. I would like to point out that we are now in a rather difficult transition period. Many of the men who are now in residency training are men who were trained under the V-12 and the ASTP program. Congress has enacted legislation which makes it necessary for them to serve for a period on active military duty. I think that the advisory committees are doing the best that they can during this initial period. There is an acute need in the army for doctors at the present time. There is a real reluctance to pick out the men who are veterans of World War II, who are established in practice and ask them to break up their practice and go back into service. The amount of disruption, the amount of economic loss to a man who is in a residency training program is infinitesimal as compared to the amount that the practicing group have invested. For that reason there appears to be a much heavier drain from the residency group at the present time than is apt to occur at a later period. During this time when the armed forces military manpower group is being built up, there is bound to be some dislocation and some difficulty. If this is a prolonged emergency, and I think that most of us are setting our sights for a minimum of 10 to 15 years of intense concentration on national defense, it is obvious that there is going to be a rotation of doctors.

During the last war the military forces set their requirements for medical manpower on the ratio of seven doctors per 1,000 troops. At the present time while there is some minor difference between the Army and Navy, there will be about four doctors per 1,000 troops. If we have an army of three million men we are going to need about 12,000 doctors in the armed forces. There are about 6,100 to 6,200 graduates each year and it appears reasonable that about 5,000 of those will be eligible. It is apparent that if a group is to serve for two years at the rate of 5,000 per year, there will be a steady inflow and outflow. The recent graduates will make up about 10,000 of the total needed. At the end of an adjustment period of two or three years there will be about as many coming out as there are going in. That was a situation which did not prevail during World War II. They kept going in but they did not come out until peace was declared. Then we were literally flooded in the hospitals trying to provide the training which all of them were entitled to have.

Now a word or two about the problem of how

many doctors to train. You may have read figures which range all the way from an estimate that we are training enough physicians to the estimate of former surgeon General Parran of the United States Public Health Service who believes that we are training 30 per cent less than we will need by 1955 or 1960. Dr. Donald Anderson has a good opportunity as secretary of the Council on Medical Education, to view this situation objectively. He estimates that there is a shortage of approximately 10 per cent. That was based on civilian needs. Estimating the size of our army as somewhere between three and four million men, the shortage will be increased to approximately 20 per cent. That is a shortage which is a real one. As long as that shortage exists there is going to be pressure, on the part of the military, on the part of the hospitals and on the part of the public to increase the number of doctors trained. The Joint Committee has recognized this situation and has urged every school to do everything it can to increase the number of students.

I do not need to recount to you the reasons why we have not increased any more that we have. It is true that since 1940 the medical schools have gone from approximately 6,100 freshmen admitted each year to a little over 7,000—an increase of more than 10 per cent. I do not need to tell you what the costs of medical education are, almost all of you could tell me. There is no need to tell you how expensive it is to build buildings, nor how expensive it is to build hospital facilities nor how difficult it is to persuade well-qualified men to enter the academic medicine with the rather low incomes which are available to them. The matter of expansion hinges on the matter of support.

Many of you, I am sure, saw the article in *Colliers Magazine* which appeared several weeks ago dealing with the question of training more physicians. In this article the medical groups were maneuvered into the position of appearing to be blocking the increase in the number of doctors. This is a position to which I do not believe we are entitled. The physicians themselves are basically not opposed to an increase in the number in their profession. I think, however, that they are highly suspicious of the federal government, and well they might be with the difficulties they have had in the past few years. I am not prepared to say whether the position of the American Medical Association in opposing the bill introduced into Congress during the last session to provide subsidies for medical education was a justifiable position or not. It was a reasonably good bill and it was probably the best bill that has been introduced. Perhaps there were some things about the bill which could be properly criticized, but in any event the AMA has been maneuvered into the position of opposing something for which there is apparently no other solution. Now I say that in the face of the recent announcement by the AMA at its recent meeting in Cleveland, setting up the American Medical Foun-

dation with a contribution of half a million dollars. A half million dollars is a great deal of money and a portion of it will be a welcome gift to any medical school. But in light of the fact that our schools at the present time lack approximately \$10 million a year for their operating budgets, a half million dollars is not going far. Comparatively speaking the state schools have been in a much better position than the private schools since they have had an opportunity to augment their incomes by legislative appropriation. The private schools have been in a much more difficult position. I say that from a personal experience because it was my privilege a year ago to work with the new Board of Trustees of the New York State in surveying four private medical schools who were offering their facilities to the State of New York. A proud university like Syracuse University finds that it is no longer able to afford a medical school. It has no desire to be rid of its medical school except for the uncomfortable reason that it can no longer afford it. Now the Syracuse medical school is the new State University of New York Medical Center at Syracuse.

There has not been a new private medical school started in the United States since 1940. There was one exception to that—the Southwestern Medical College which was started in Dallas at the time that Baylor University moved to Houston. It operated as a private school for five or six years. It is now the Dallas branch of the University of Texas Medical School. It appears inevitable that the only satisfactory source for the large sums of money needed to operate a medical school, the sums of money needed to train the kind of doctors that the people of the United States want to take care of them when they are ill, is from tax sources.

Almost every medical school is receiving support from federal sources at the present time. They are all getting money from the cancer and cardiac teaching grants and from the United States Public Health Services research programs. None of us in the medical schools feel that this is interfering with our program; none of us, however, can prognosticate what will happen if the proportion of the federal funds becomes larger than from other sources. We cannot tell whether there will be an increasing tendency to interfere in the internal affairs of the medical schools. I can honestly say that up to the present time there has not been such interference. Instead there has been a great deal of sympathetic understanding from the people of the United States Public Health Service in the administration of these funds.

I would like to say in closing that I hope the organized medical profession of the United States will realize how serious the financial plight of the medical schools is. I hope that it will get behind any reasonable proposition to increase the funds which are available so that the medical schools can increase the number of doctors which are to be made available to support our national position during this great crisis facing us.

HYPERTROPHIC PYLORIC STENOSIS

A CASE REPORT OF AN INFANTILE TYPE FOLLOWED
BY AN ADULT TYPE

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AND
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WEST LIBERTY

CONGENITAL PYLORIC HYPERTROPHY is a fairly frequent clinical entity in infants and rarely there occurs in adults a lesion which is strikingly similar. The literature contains reports of many large series of the successfully surgically treated infantile type of cases. Pediatricians and surgeons recognize that the infantile pyloric stenosis is a surgical condition and with modern surgical preoperative preparation and postoperative care, the Fredet-Ramstedt operation will provide a permanent cure. Dr. Martha Wollstein¹ made a study of healing after the Fredet-Ramstedt operation from 23 autopsies performed 24 hours to two years after operation. She found that the unstriated muscle cells take no part in the healing process. The pylorus becomes relaxed and relatively normal in appearance within two weeks. The stomach returns to normal within one month. She contrasts this with the operation of gastro-enterostomy which leaves the pylorus unchanged. Cases are reported by Donovan² and others of the persistence into adult life of the pyloric tumors, who, during infancy, had had gastro-enterostomies performed. One of us (Dr. Dulin) has had a similar experience. A patient, 29 years old, having had a gastro-enterostomy at the age of four weeks, developed a jejunal ulcer and was treated eventually by a subtotal gastric resection.

ETIOLOGY

While there are many theories as to the cause of the congenital type, it is still unknown whether the hypertrophy of the circular muscle precedes or follows the pylorospasm. The symptoms seem to vary with the amount of spasm rather than the size of the tumor which suggests an intrinsic nerve imbalance.

The morphology of the infantile and adult types are identical and there are cases recorded in the literature^{3,4,5} who had intermittent symptoms of pyloric obstruction since infancy continuing into adult life. Roentgenologic abnormalities have been reported by Runstrom⁶ years after the active symptoms have disappeared in the unoperated patients.

PATHOLOGY

In both infantile and adult types one should find a firm, almost cartilaginous tumor which completely encircles the pylorus for two to four centimeters. The mass, especially the mucosa in the adult type, projects into the duodenum and gradually blends into the pyloric antrum on the gastric side. Because of the obstruction, the stomach is dilated and thickened. Both gross and microscopic exam-

inations reveal a hypertrophy and hyperplasia chiefly of the circular muscle of the pylorus. Evidences of inflammatory reaction may be in the form of oedema and the findings of inflammatory cells, histologically.

SYMPTOMOLOGY

The clinical picture of pyloric hypertrophy are the symptoms which appear as a result of obstruction to the outlet of the stomach. Sometimes they are mild and perhaps intermittent while others are sudden in onset, severe and persistent. In the adult type epigastric distress with or without vomiting is aggravated by food and not relieved by antacids. Vomiting gives relief. The course is likely to be progressive and weight loss is common. A palpable tumor may be present.

DIAGNOSIS

The infantile pyloric hypertrophic patient is easily suspected from the history and when the pyloric mass is palpable, the diagnosis has been established. In this group roentgenological studies are not only unnecessary but actually contraindicated since it increases the postoperative complications if all the medium is not removed. Those of later life must be differentiated from a stenosing

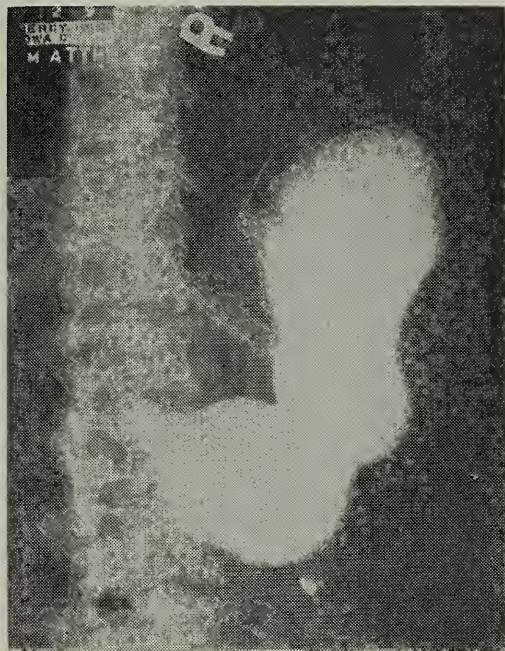


FIGURE 1. Roentgenogram showing extreme narrowing of the pyloric canal. There is no invagination into the duodenum. About 50 per cent of the barium meal is retained in the stomach after six hours.

ulcer or an annular carcinoma. All three lesions produce narrowing of the pyloric canal and gastric retention. The roentgenologist may find a study of the gastric mucosal pattern helpful since there may be a prolapse of the mucosa projecting into the barium. Such a "mushroom" deformity is considered pathognomonic by Kirklin.⁷ Whenever there is a suspicion of either a tumor or pyloric hypertrophy, surgical exploration is indicated.

TREATMENT

When treatment is indicated surgery is advised. Medical methods have little to offer. Preoperative management should include the restoration of fluids, electrolytes, etc., as indicated. For marked gastric retention and dilatation, aspiration of the

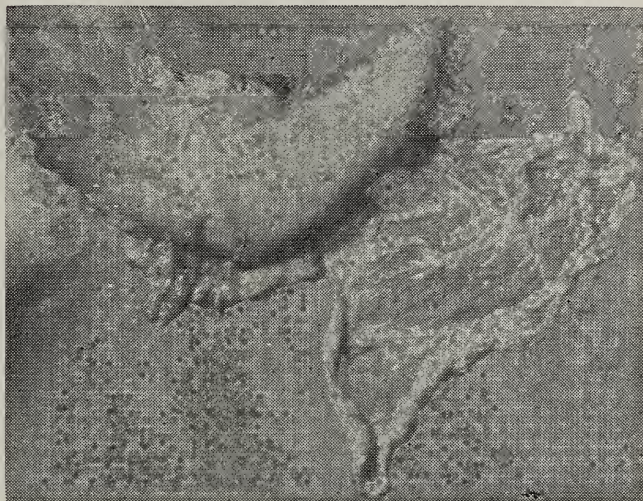


FIGURE 2. The resected portion of the stomach with a portion of the greater omentum attached. The scar from the Fredet-Ramstedt operation may be noted. The thickened contracted pyloric region is represented by the narrowing of the distal portion of the specimen.

stomach contents is advisable preoperatively. The Fredet-Ramstedt pyloromyotomy is simple to execute, has given excellent results in infants and has been satisfactorily employed in adults. The collective series of 59 cases with operative or necropsy verification by North and Johnson⁸ with the addition of five cases of their own reveals that gastric resection was performed on 24 patients. Gastroenterostomy was the operative procedure in seven cases, pyloroplasty in four and pyloromyotomy in three. We feel that gastric resection is the procedure of choice since it allows for the removal of sufficient tissue to rule out neoplasm, provides for correction of the obstruction to the alimentary tract, and would be less likely to be followed by a jejunal ulcer than gastro-jejunostomy.

The case which we wish to report had the congenital type and recovered following a Fredet-Ramstedt operation but subsequently developed the adult variety. In the literature which we reviewed, no similar case was encountered.

CASE REPORT

R. E. M. was delivered by one of us (Dr. Ady) on October 19, 1931. The infant's mother was 23 years old, and the father was 25 years old. There had been two previous pregnancies. This child was born by spontaneous delivery after a 17 hour labor. The birth weight was nine pounds, three ounces. He was breast fed for three weeks and then bottle fed. Vomiting started at the age of two weeks and continued until his admission to the Department of Pediatrics at the University of Iowa on November 24, 1931.

On physical examination the infant was considered undernourished. The stomach outline with peristaltic waves could be seen. A palpable mass in the region of the pylorus was encountered. A projectile type of vomiting followed each attempt at feeding. Routine laboratory examinations were recorded as normal.

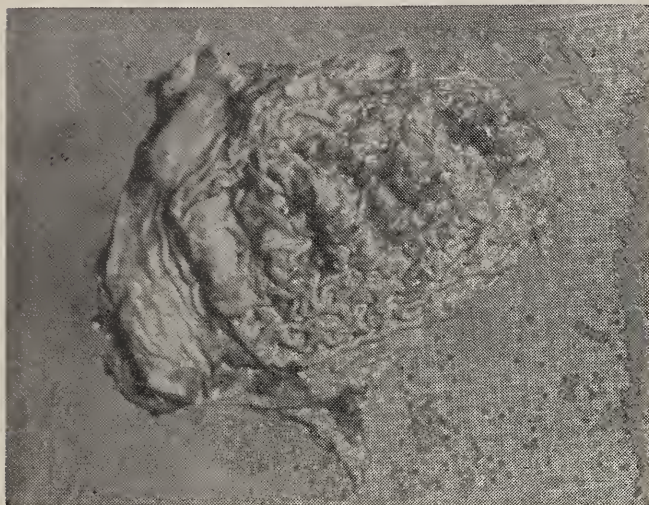


FIGURE 3. In the opened resected stomach the hypertrophied pyloric ring may be seen near the margin of the pylorus.

On the second day after admission to the hospital he was seen by members of the Surgery Department and on November 26, 1931, a Fredet-Ramstedt operation was performed by Dr. Glenn C. Blome. His operative record describes the classical "olive" mass of the congenital hypertrophic pyloric stenosis. The operation was performed without mishaps. Postoperatively, the infant took his feeding well, without vomiting, gained weight rapidly and was discharged on December 3, 1931.

The patient developed normally and was considered to have better than average health until the summer of 1949 when he consulted Dr. Ady because of abdominal pain. At the onset pain was partly relieved by food but as time progressed food intake aggravated the distress and in addition there was localization to the epigastrium. At times he had a burning sensation associated with sour eructations. An ulcer regime failed to give relief. His appetite remained good but he was losing weight. The physical examination and the routine laboratory studies revealed nothing abnormal.

Gastro-intestinal roentgen ray studies were made. The stomach was atonic and somewhat dilated. The prepyloric region was constricted and deformed. Irritability of the duodenal bulb was present but no persistent niche was noted. Five hours after its injection about 50 per cent of the opaque meal was retained in the stomach. The changes observed were interpreted as due to a benign antral hypertrophy and a duodenal ulcer. (Figure 1.)

Laparotomy was performed on January 11, 1950, under general anesthesia, through a left transrectus incision. The stomach was found to be dilated and its wall was generally thickened. The thickening was marked in the pyloric region so that it

produced a definite mass. Irritability of the stomach wall was conspicuous. A scar at the site of the Fredet-Ramstedt procedure was identified. Here the stomach wall was thin and it was felt that ulceration of the mucosa directly opposite was present. The degree of obstruction was such that the tip of the surgeon's fifth finger could not be admitted into the pyloric canal. Adjacent lymph nodes were not enlarged. The distal 80 per cent of the stomach was resected and a Hofmeister repair of the gastro-intestinal tract continuity made. (Figures 2, 3.) He took a soft diet on the seventh day and was discharged on the eleventh post-operative day. One year later he has remained asymptomatic, having gained ten pounds in weight.

The pathologist noted no gross abnormalities except for the thickening of the muscular layers in the pyloric end of the stomach with some redundant mucosa prolapsing through into the proximal duodenum.

The microscopic examination: "Sections show normal gastric mucosa blending into that of the duodenum. There are focal areas of lymphocytic infiltration in the tunica propria of the duodenum. The circular layer of the muscular wall in the pylorus is thickened and there is an increase in fibrous tissue between the circular and longitudinal layer. There is no evidence of malignancy or ulceration.

Pathological Diagnosis: "Hypertrophy of circular

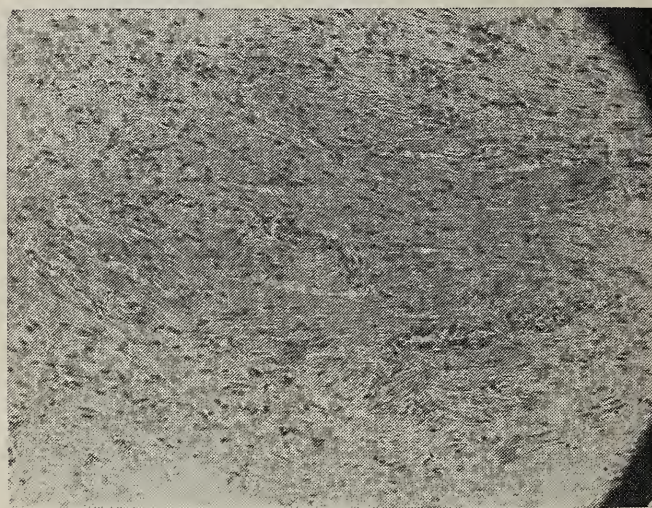


FIGURE 4. Photomicrograph of the pyloric region of the stomach showing inflammatory cells in addition to the hypertrophy of the muscularis.

muscle fibers, pyloric ring of stomach, consistent with pyloric stenosis." (Figure 4.)

COMMENT

The presence of the inflammatory cells has been observed by other authors.⁸ Berk and Dunlap⁹ noted the finding of an inflammatory reaction histologically. In their opinion the inflammatory reaction had no etiological significance. They felt that the personality pattern in each of their two adult patients was significant from the standpoint of etiology. One of us (Dr. Ady) feels that the patho-

genesis in our case is related to personality mal-functionings. The validity for this assumption is based on the facts that there has been constant sickness in the family for years, financial difficulties, plus pampering by a grandparent. This hypothesis assumes that recurring or prolonged pylorospasm is responsible for the hypertrophy of the pyloric muscle. Our case would indicate that the responsible factor in the infantile type is present in the adult type.

SUMMARY

This case reveals that the adult type of hypertrophic pyloric stenosis may be preceded by the congenital type. The adult type may appear following a clinically satisfactory result from a Fredet-Ramstedt operation during infancy. Subtotal gastric resection is a satisfactory method for treating the adult type.

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State University of Iowa
College of Medicine

CLINICAL PATHOLOGIC CONFERENCE February 7, 1951

SUMMARY OF CLINICAL RECORD

FIVE HOURS AFTER the sudden onset of severe frontal headache and vomiting, a 44 year old white woman was admitted to the isolation ward of the University Hospitals as a possible victim of poliomyelitis. Except for an episode of nausea and vomiting three days previously, she had felt fairly well and was able to carry on her housework prior to the onset of her illness. She walked in, supported by her husband who stated he had noted her tongue had become "thick" and her speech unnatural. During the preceding three years the patient had suffered from hypertension, poor sleep and appetite, attacks of nausea and vomiting, a weight loss of 35 pounds, occipital headaches, aching shoulders and attacks of numbness involving both arms and face for several hours at a time. These attacks were brought on by exertion and relieved by rest. One such episode during the previous year was considered a "heart attack" and required four weeks hospitalization. There was no history of head injury, meningi-

gitis or convulsions. There was no family history of epilepsy.

On examination at the time of admission, the temperature, pulse and respiratory rates were normal. The blood pressure was 160/110. The patient was moderately obese, confused and stuporous, though easily aroused. The neck was stiff on attempted anteflexion. Other significant findings included slight anisocoria, "early choked discs," weakness of the left lower face and tongue, left arm monoparesis, tendon reflexes were sluggish to absent and flexor plantar responses. Two generalized tonic-clonic convulsions accompanied by tongue biting and incontinence were observed during the examination. A third seizure five hours after admission was witnessed by the neurological consultant who described deviation of the eyes to the right and rigid extension of all the extremities except the left arm which remained flexed. Another convulsion occurred two hours later and was controlled by parenteral sodium phenobarbital.

Lumbar puncture performed shortly after admission revealed grossly and persistently bloody cerebrospinal fluid under a pressure of 120 mm. There were 180,000 red blood cells and 36 white blood cells per cu. mm. of fluid. The condition of the supernatant fluid was not recorded, but the total protein content was 219 mg. per cent; serological tests and cultures of the fluid were negative. The urine had a specific gravity of 1.012 and showed no abnormality on chemical tests and an occasional white blood cell on microscopic examination. The blood hemoglobin value was 14 mg. per 100 ml.; the red blood cell count was 4,250,000 per cu. mm. and the white blood cell count was 12,200 per cu. ml. The peripheral blood smear revealed 85 segmental neutrophils, 5 band polymorphs and 15 lymphocytes. The bleeding time was 1 minute, coagulation time 5 minutes and 5 seconds, clot retraction was complete, prothrombin time was 55 seconds with a control of 45 seconds and the platelet count was 286,000. The fasting blood sugar was 80 mg. per cent. Agglutinations for brucella and typhoid were negative. A roentgenogram of the chest showed increased bronchovascular markings. Roentgenograms of the skull demonstrated a questionable shift of a calcified pineal gland to the left. An electrocardiogram was normal except for "nodal rhythm."

On the day following admission, the patient was clear mentally, but complained of terrible pain in the right forehead. She was transferred to the neurological ward where other observers found her to be somnolent and irritable. She yawned frequently and lay with her head turned to the left. In addition to the neurological disturbances already noted, divergent squint, hypotonia of the left hand, left-sided areflexia and diminished response to pin prick in the left arm were demonstrated. The ophthalmologist noted congestion of the left retinal veins and an old preretinal hemorrhage above the left macula.

The patient improved with bed rest and during the first week had a low grade fever, subsiding to normal in the following ten days. The left hemi-

paresis had disappeared by the seventeenth hospital day, leaving only left-sided astereognosis. Open carotid angiograms were obtained the following day. Three days later, while the patient was talking to her husband, she suddenly put both hands to her head, stated that she felt another attack approaching and lapsed into coma in the next few moments. Brief convulsive movements of the face were followed by an emesis three to four minutes

tured cerebral aneurysm, hypertensive encephalopathy with hemorrhage, a vascular tumor, cerebral embolism, brain abscess and intracranial neoplasm. The class opinion of the most likely lesion was rather closely split between ruptured cerebral aneurysm and hypertensive encephalopathy with hemorrhage. We tried to localize the point of bleeding and thought probably it was the middle cerebral artery. We thought the cause of death was

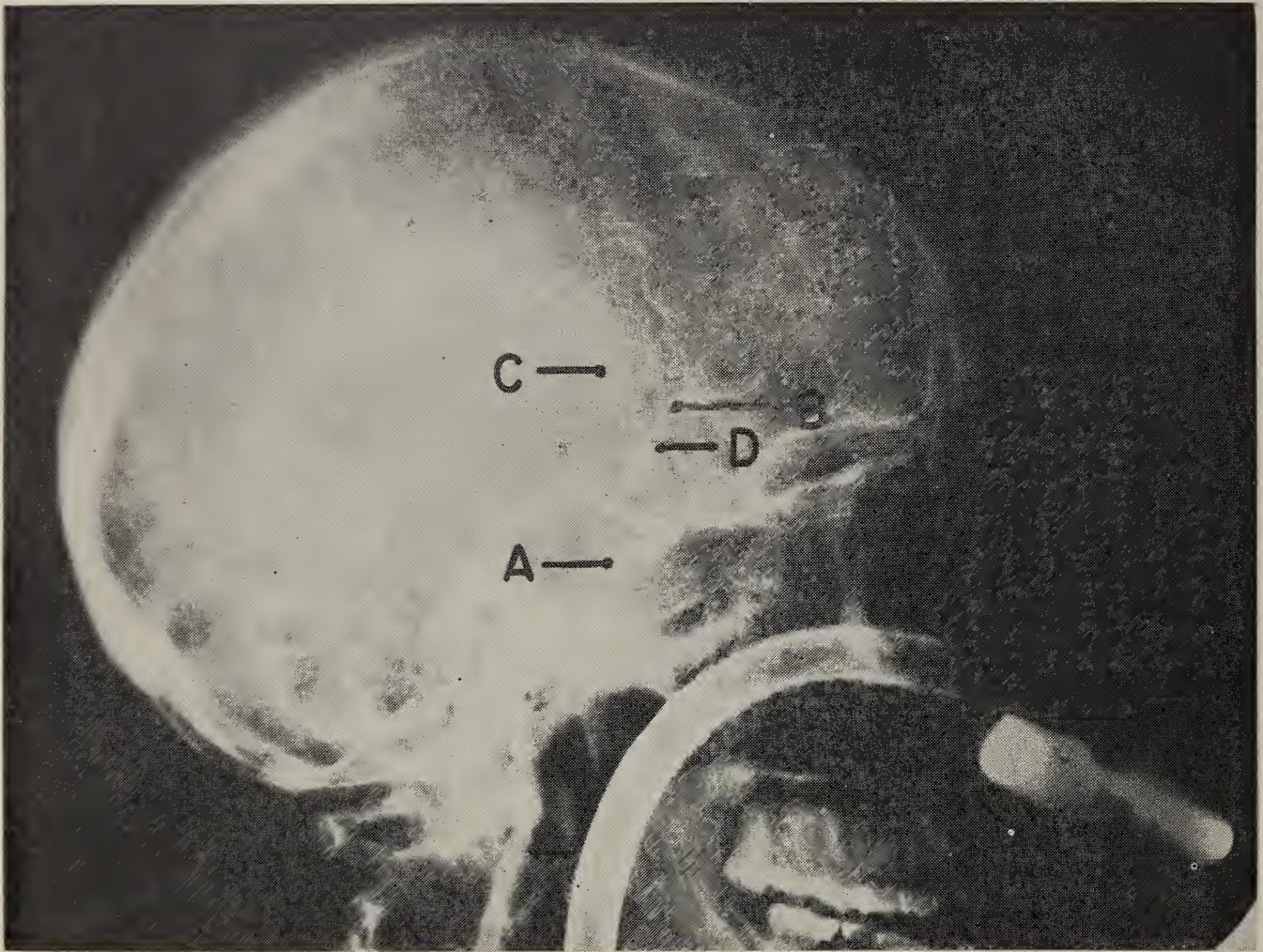


FIGURE 1. Carotid Arteriogram. A—Carotid artery. B—Anterior Cerebral artery. C—Middle Cerebral artery. D—the Aneurysm.

later. Aspirated vomitus were removed by suction. The patient's condition became rapidly worse, and she had to be placed in a respirator 3½ hours later because of rapid, shallow breathing and increasing cyanosis. She failed to respond and died the following day.

Abstracted by Frederick H. Hesser, M.D.

CLINICAL DISCUSSION

Dr. Frederick H. Hesser, Neurology: This case exemplifies one of the more difficult problems in neurology and neurosurgery, i.e., the investigation and management of subarachnoid hemorrhage. Before making further comments on the protocol, I should like to call for the students' opinion.

Mr. James C. Milliman, Student: In considering a differential diagnosis, our class discussed a rup-

respiratory depression with a more or less 90 per cent central cause and a small factor from peripheral cause from aspiration of vomitus in the lungs.

Dr. Hesser: I wonder if the students ventured any ideas about the ultimate extent of structural alteration in this patient's brain.

Mr. Milliman: We did not discuss that point, but from the protocol it seemed that this was more or less a chronic lesion and, if so, it had a chance for widespread degeneration. She had some evidence of this recurring numbness and paresis of various sorts, so I think there would be quite a bit of gross damage to the brain. That would be in favor of the ruptured aneurysm and if it were on the basis of an old rupture being plugged by a clot then subsequently bleeding, I think that over the time which it occurred there would be considerable damage.

Dr. Hesser: Did anyone attempt to explain why this patient's symptoms and signs were variable in character and severity?

Mr. Milliman: We did not discuss that either. However, I think that aneurysms are described as frequently giving this type of history with exacerbations of the symptoms and remissions. I would try to explain it again on this bleeding with subsequent tamponing of the bleeding and then again rupturing and bleeding again; or, also this factor of hypertension being a strong factor in producing any of these lesions, aneurysm or the hypertensive encephalopathy with bleeding would be dependent upon her state of excitement and that would tend to precipitate.

Dr. Hesser: The student group is correct in assuming that bleeding in this case occurred from a leaking intracranial aneurysm. Statistically the weight of evidence favors such an opinion, such leaking aneurysm is known to be by far the commonest cause of subarachnoid hemorrhage occurring without external trauma. Head injuries, on the other hand, actually account for more than half of all instances of subarachnoid bleeding in these days of high accident toll in the civilian population.

Several features of the case record are of particular interest. The presence of hypertensive vascular disease and concomitant symptoms immediately suggest the possibility of an associated intracerebral hemorrhage with rupture into the ventricle or subarachnoid space. In such instances we are still justified in proceeding to investigate other etiologic possibilities. Intracerebral hemorrhage usually produces a sudden, severe and persistent neurological deficit. Intraventricular bleeding of any severity is rapidly fatal. By contrast, this patient's sudden onset of symptoms was followed progressively by variable manifestations of cortical irritation (convulsions) and neurological dysfunction with chiefly right-sided brain involvement and clinical improvement in ensuing days. After two weeks, neurological alteration was limited to left-sided asteriognosis, indicating dramatically improved cerebral function and minimal structural damage at that time. It would seem, therefore, that initial dysfunction in this case was a reversible process wherein cerebral ischemia due to irritative reflex cerebral angiospasm undoubtedly played a large part.

The final diagnosis in this case was, as you will see, established entirely by laboratory methods. Lumbar puncture confirmed the presence of subarachnoid hemorrhage of moderate severity. The concentration of blood in the cerebrospinal fluid was approximately three to four per cent. The total protein content of the centrifuged spinal fluid, when corrected proportionately for the total protein content of blood plasma added by hemorrhage, was essentially normal and pointed suspicion away from the possibility of pre-existing disease as brain tumor, wherein the total protein content of the spinal fluid is often increased above normal. (These calculations are based on the estimate that the total

protein content of spinal fluid increases 1 mg. per 100 ml. for each 1,000 red cells per cu. mm. added to the spinal fluid by hemorrhage. Hence, 180,000 red cells per cu. mm. of spinal fluid should be accompanied by an increase of 180 mg. per 100 ml. in its total protein content. Since the value found in this case was 219 mg. per 100 ml., the total protein content of the fluid before hemorrhage must have been 39 mg. per 100 ml., a normal value.) Further indication of a right-sided lesion was found in roent-

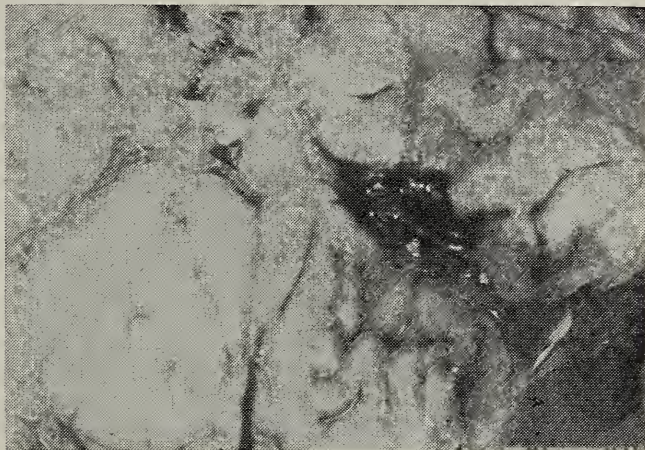


FIGURE 2. Subarachnoid extravasation of blood, right Sylvian fissure.

genographic evidence of displacement of the pineal gland to the left. Dr. Perret will discuss the results of cerebral angiography.

Dr. George E. Perret, Neurosurgery: The carotid arteriogram (Figure 1) shows the internal carotid artery, the siphon, the intracranial portion of the internal carotid, its division into the anterior cerebral and the middle cerebral, posterior communicating and posterior cerebral arteries and on the anterior portion of the middle artery you see a small ballooning which was interpreted as an aneurysm. The second important fact that you can see from these x-rays is the fact that the middle cerebral artery is displaced superiorly. Normally the artery should follow roughly a straight oblique course. Here it is displaced suggesting that a mass might be present in the temporal lobe; and this mass, together with the evidence of the aneurysm, may probably be a hemorrhage.

NECROPSY FINDINGS

There was extensive extravasation of blood into the subarachnoid space over the right hemisphere, fissure of Sylvius (Figure 2) and the right base. The source of the bleeding was an aneurysm 8 x 6 x 6 mm. (Figure 3) at the first bifurcation of the right middle cerebral artery. An infarct in the right temporal lobe had ruptured into the right lateral ventricle and all the ventricles contained fresh blood. The basilar and right middle cerebral arteries showed extensive atherosclerotic change.

There was generalized and moderately severe arteriosclerosis. This was especially prominent in the coronary arteries (Figure 4), although there

was no evidence of myocardial infarction, old or recent. The weight of the heart was slightly greater than normal.

Incidental findings were gall bladder calculi and a leiomyoma of the uterus.

NECROPSY DIAGNOSIS

Ruptured aneurysm, right middle cerebral artery, with massive subarachnoid and intraventricular bleeding.

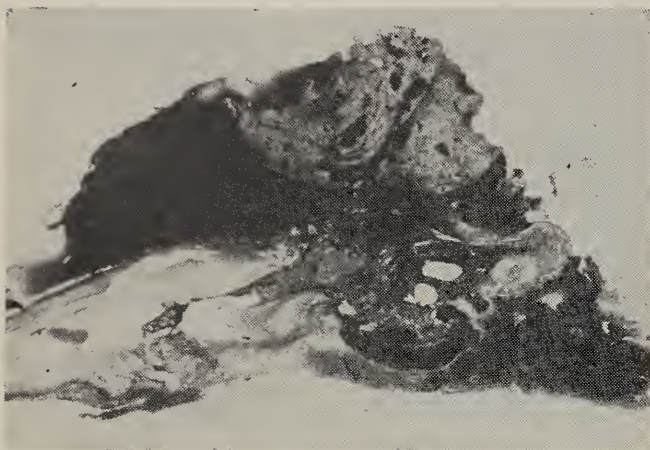


FIGURE 3. Aneurysm of right middle cerebral artery, severe sclerosis of artery, surrounded by clotted blood.

Arteriosclerosis, severe, generalized.

Cholecystolithiasis.

Leiomyoma, uterus.

Dr. Eugene J. Boyd, Pathology: The matter of aspirated vomitus is always a real problem as far as we are concerned. We find liquid vomitus in the tracheobronchial tree frequently, but we are not always convinced that it was present before death or reached there at the time of death. When a body is moved around a little bit and the stomach is full, there can be an overflow. In this case there was no evidence of reaction to the gastric contents and usually the inflammatory reaction is rather violent. This patient did not live long, however, and perhaps there was no time for the inflammatory reaction to develop.

Dr. Hesser: We are fortunate in having this patient's family physician with us today. Dr. Bennett, would you care to give us your reaction to this case?

Dr. Andrew W. Bennett, Iowa City: This patient was one of those emergencies you see in general practice. I saw her about 4:30 in the afternoon at her home in response to a call at which time she presented the picture that was given here. At the time it seemed that there were several reasons for hospitalizing her, there being a possibility of either encephalitis or anterior polio of bizarre type because it was prevalent at that time. However, the main reason was to get her to a place where she could be adequately treated and studied.

In the notes here, I notice that she was supposed to have had an attack similar to this some two or three years before at which time she was treated

in the hospital for a cardiac lesion. At that time I saw her suffering from a typical coronary syndrome in the country and brought her to the hospital in an ambulance. In spite of the fact that the autopsy showed no evidence of previous or fresh coronary infarction, at that time the electrocardiograph and clinical picture were typical and entirely different from any manifestations she had later.

Dr. Hesser: I should like to mention that the occurrence of intracranial aneurysms has been recognized for at least 190 years. Their first description was recorded by Morgagni in 1761. A case of subarachnoid hemorrhage was described by Biumi in 1778 and was found to be associated with a ruptured aneurysm of the circle of Willis at necropsy. The frequent correlation between subarachnoid hemorrhage and rupture of intracranial aneurysms, however, was not emphasized until pointed out by Gull in 1859.

Dr. Adolph L. Sahs, Neurology: This condition was formerly called "hemorrhagic meningitis." This disorder is distinguished with difficulty from the acute infections of the nervous system on the basis of the clinical examination alone. The only way to make a positive diagnosis is to perform a spinal puncture.

This situation occurs quite commonly. In the patients which arrive at this hospital, the average age of onset is 43 years. The sex incidence is about equal. Etiologic factors are said to range from congenital disturbances of the vessels of the circle of Willis to atherosclerosis and infections, including syphilis. We feel that atherosclerotic and syphilitic aneurysms account for an extremely small percentage of such cases and mycotic aneurysms which occur during the course of subacute bacterial endocarditis, for example, are also in the minority. These are, for the most part, congenital or developmental aneurysms. The fact that they do not rupture until the patient reaches the age of 20, 40 or 50 years can be explained by the progressive changes which take place in a weakened vessel throughout the years. As time goes on, the wall becomes thinner and thinner, so that usually our first indication of trouble takes place when seepage occurs. Unruptured aneurysms, particularly those in the area of the intracranial portion of the internal carotid artery, will sometimes result in progressive encroachment on the third nerve and the visual fibers. After rupture has taken place the patient may die as a result of massive bleeding into the subarachnoid space or he may survive and experience subsequent bouts of bleeding.

Most of these aneurysms were situated along the anterior portion of the circle of Willis. In dissecting a specimen of the brain in the autopsy room, one should first investigate the region of the internal carotid arteries, then the middle cerebral arteries in the fissures of Sylvius and also the two anterior cerebral arteries as they course anteriorly and upward between the two frontal lobes. Approximately 80 per cent of the aneurysms will be found in these

areas. The remainder will be found distributed along the posterior portion of the circle.

One theory advanced to explain the formation of these aneurysms is that of unobliterated remnants left behind during the course of embryologic development. The other explanation and the situation most commonly found is that of the bifurcation defect. These aneurysms invariably form at the junction points of the cerebral vessels. Sometimes they are rather small and are found with difficulty. At other times they are quite large. Rarely does one find multiple aneurysm formation. In one of our cases, however, seven aneurysms were found distributed over the anterior portion of the circle of Willis. Microscopic sections show a defect in the media usually and a striking amount of thinning of the elastic layer. The wall of the aneurysm is usually composed mostly of fibrous tissue. There is good evidence that progressive stretching takes place until the weakest portion of the wall ruptures.

Most of the bifurcations of the cerebral arteries will have defects in the media overlying the bifurcation point. An intact elastica is usually found over the normal bifurcations; a fragmented elastica is seen over the small or large outpouchings which eventually result in typical aneurysms. We have been interested in trying to find out what makes the elastica give way, but thus far we do not have the answer to this question.

Dr. Hesser: At this point, I am sure you may be wondering what we can offer these patients in way of specific diagnosis and treatment. Dr. Perret will discuss cerebral angiography and the neurosurgical approach to the problem of intracranial aneurysms.

Dr. Perret: Unfortunately we rarely see an aneurysm before it is ruptured. I wish that neurologic diagnosis would permit us to diagnose aneurysms before they rupture so that we could treat these patients before they are poor candidates. The intravital diagnosis of cerebral aneurysm has progressed a great deal in the last 24 years since angiography was introduced. Cerebral angiography as you know was first introduced by Egas Moniz in 1927. At that time the carotid had to be visualized before a contrast dye could be injected. In 1942, a Japanese neurosurgeon, Shimitsu, first introduced the percutaneous method of injecting the carotids. We now use diodrast, preferably 35 per cent solution. We need a separate injection from 6 to 10 cc. for each picture that is taken. We like to have one or two AP views of the skull which means one or two injections; and two lateral views of the skull taken stereoscopically. That means a minimum of three or four injections altogether.

When we look at the arteriograms we have to know something about the vessels we see. First, we have to inspect the internal carotid and its divisions. The anterior cerebral artery divides into a number of vessels which we have to consider. We have to try to visualize the anterior communicating artery. We also follow the course of the middle cerebral artery and its branches; we may study

the ophthalmic artery which may occasionally also carry aneurysms, the posterior cerebral and the posterior communicating arteries. When we have an angiogram, we have to study it from various points of view. Not all patients may have aneurysm. Some may have an arteriovenous malformation which produces exactly the same symptoms. Those have to be looked for. Other patients may have intracerebral tumors which bleed and which also produce subarachnoid hemorrhages. We have also to look for a tumor if we do not see an aneurysm.

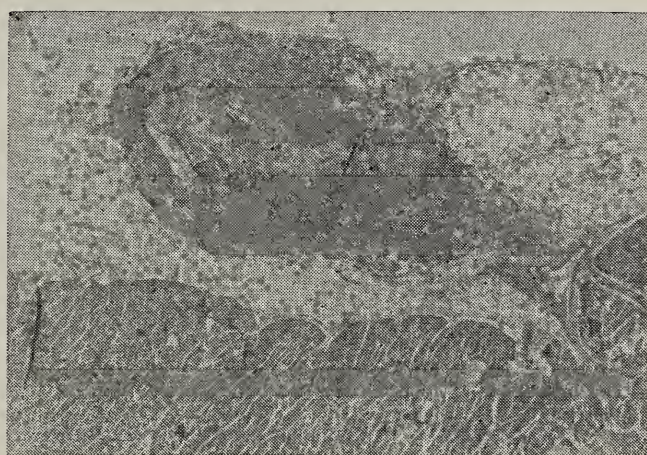


FIGURE 4. Coronary artery showing severe atherosclerosis.

Then we have to find out whether the patient could have an intracerebral hemorrhage, and if we do not see an aneurysm, we have to figure out where the hemorrhage is located and which vessels would have been displaced by them. Then we have also to study the possible presence of cerebral thrombosis which may at times give a similar clinical picture. Cerebral thrombosis will also show up in the arteriograms. The last thing to look for is the presence of vasospasms. We see spastic vessels often in arteriograms, and these also may cause cerebral symptoms, although commonly not subarachnoid hemorrhage.

In cases of cerebral aneurysms the arteriograms may disclose the presence of a thrombosis within the aneurysm or within the distal vessels emerging from the aneurysm. An intracerebral hemorrhage which has occurred secondarily to the ruptured aneurysm may also be present. Vascular spasms central to the site of the aneurysm are also frequently encountered.

We believe that patients with subarachnoid hemorrhage should have arteriographic studies performed as soon as possible. The minute the diagnosis is made by spinal puncture, arteriography should be done. There is no point in waiting, as in the case followed today, until the patient is clinically improved to do the studies because obviously rupture will take place again and the second rupture might be fatal. Following angiography with demonstration of the pathology we believe that treatment should be instituted as soon as possible. The longer one waits, the more there is a chance of a second

(Continued on page 199)

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MAY, 1951

No. 5

CIVIL DEFENSE

Preparations for the role of the physician in civil defense continue to move forward under the direction of the State Commissioner of Health. A recent conference course was held at the College of Medicine, Iowa City. Plans for civil defense are now set up in major cities of the state.

Numerous lessons were learned in World War II. The United States is probably the most changing and shifting nation in the world in regard to the aging of the population and urbanization of its citizens. There are now 50 cities with a population exceeding 200,000, a minimum likely to be considered a good atomic bomb target. A clear pattern of certain essentials must be established and assured if a modern nation is to survive the disasters of war. Success in modern war requires maximum national mobilization from the first intimation of war. Repeated forceful enemy attacks against an urban population results ultimately in economic collapse, submission and then defeat, regardless of success in combat. Homeland collapse follows a definite pattern: loss of control of the air, lack of coal, lack of liquid fuels and lubricants, insufficient transports and communications, insufficient food, lack of steel, insufficient ammunition, insufficient civilian supplies, insufficient raw materials, insufficient utilities, lack of capital equipment, insufficient manpower and insufficient medical and health services.

Fortunately new weapons are available and others will appear from time to time. New protective measures for counterattacks will be developed. These complex weapons necessitate an increasing number of skilled men and women. The

civilian population and its industrial facilities must adapt to ever changing circumstances just as readily as armed forces. Modern war creates an increasing demand for enormous quantities of supplies. It is now estimated that the minimum medical equipment and supplies necessary to save and maintain the life of one atomic explosion victim for five days would weigh 50 pounds and cost \$25.00. Competition in another war will require the maximum adaptation of internal economy to a potential theater of operations.

In reviewing these lessons learned from the last war it is apparent that the efforts now being carried out are worthy of the cooperation of every physician if medical and health services are to be available at the moment any disaster might strike.

THE "SECOND LOOK"

Cancer is curable when a single, primary lesion exists. However, the cure rate plunges rapidly when the autonomous cells of cancer leave the primary lesion to become metastatic. The surgeon who deals with metastatic malignancy will find his wisdom, technical abilities and resolution tried to the breaking point. The removal of *all* neoplastic tissue is essential if a "cure" is to be anticipated. Certain radical surgical procedures have, through the years, become "routine" in the treatment of certain malignancies—as the Halsted mastectomy or the Miles' combined resection. Procedures of this type have become so highly regarded that the physician tends to dignify the operation as a court of last resort. Thousands of individuals have been saved by such radical types of surgery, but the many thousands of failures have all too often been viewed philosophically as a toll which malignancy must and will exact.

Recently, surgeons have begun to appraise their work and have not always found it "good to look upon." There is a growing dissatisfaction with the completeness of operations, looked upon only a few years ago as heroic. Efforts are continually made to improve this situation, some abortive and others worthy of consideration. The continuing work of Lewis and Wangenstein is of interest in this respect. Re-operation for recurrent malignancy is being done with increasing frequency throughout the country. These men have adopted an even more realistic approach to the problem and have advocated the re-exploration of certain patients before evidences of malignant recurrence have become apparent. At the time of this "second look," neoplastic recurrences may well be accessible and resectable—thus offering the patient at least a tenuous chance of "cure," when otherwise failure must result. Patients at the University of Minnesota Hospitals with malignancy of the colon, rectum or stomach and with carcinomatous spread to lymph nodes, are now being offered a "second look." The results of this study during the past 18 months are stimulating. Twenty-one patients with Duke's Group C lesions of the colon or rectum have been

re-explored, after primary and definitive surgery, before there were evidences of recurrence. Seven of these patients were found "cured"; but 14 had gross evidences of persistent carcinoma. Of these 14 patients, all gross recurrence was resected in 12. Seven of these 12 patients have been explored again, i.e., "third looks, fourth looks, etc.," and no evidence of malignancy found in three of them. Thus of 14 patients with recurrent carcinoma of the colon or rectum, three have been given a significant chance to live, whereas without the "second look," failure would have become a certainty. Many of the recurrences observed at the time of the "second look" lay along the periaortic and vena cava lymphatics. This area has always been left undisturbed in the course of usual colon resections. Perhaps out of the "second look" a better planned and more effective type of resection can be outlined for use at the time of the "first look."

Lewis and Wangenstein are to be commended for their realism and resolution. They do not recommend the "second look" for general adoption, at the present time. Yet, surgeons can be encouraged by this bold move, in a situation which has seemed a permanent stalemate and await longer term and more complete results with interest. A procedure is deserving of careful appraisal which can appreciate by 20 per cent the chances, no matter how nebulous, of any patient with metastatic malignancy of the colon or rectum.

MEDICAL CULTURE

Frequently we overhear nostalgic yearnings among members of the profession about the good old days. Perhaps this is a good time to evaluate the cultural advances of the present as compared with the past. As we grow older it becomes more difficult to accept present day changes. The standards of the past represent the finest cultural examples of that era. It is always difficult to accept new findings and achievements. However, the broad spread of cultural advances lend to these achievements.

Perhaps real culture should be defined as a mind that has standards of good taste. Certainly the present day may be signalized for evidences that the golden age of civilization is here and now. Medical libraries abound with volumes which cover the whole span of medical advancement. All medical journals are besieged by requests from foreign countries for the exchange of periodicals. Cultural developments in architecture have left their imprint in medicine through greater functional adaptation in the construction of new hospitals. The importance of pastel shades and the use of color have become more evident in hospital construction. The

expansion of medical schools perhaps emphasizes that cultural achievements have been upon a quantitative rather than a qualitative basis. Perhaps this is good; it certainly affords cultural advantages to the many rather than the few. Imagine the amazement if the great Hunter were to view any modern research laboratory with its facilities and opportunity for study.

In spite of war, discord and disharmony, it would seem apparent that there is more good will among men today than at any other time in history. Let us continue to evidence more graciousness in dealing with patients, colleagues and our fellow men.

PROBLEMS OF PNEUMONIA

The treatment of pneumonia is taken more or less for granted since the advent of sulfa drugs, and even more so by the use of penicillin and other antibiotics. Interesting studies have been made in San Francisco and Cincinnati which would indicate that some persistent problems remain in the treatment of this disease. The study at Cincinnati* reviewed 3,000 cases of pneumococcus treated at their General Hospital since 1925. Prior to this study the fatality rate exceeded 35 per cent. At the present time this figure has been reduced to 10 per cent, which remains fairly constant.

It was found that there is a definite relationship between the incidence of pneumonia and influenza. Following an influenza epidemic the pneumonia incidence doubled the following month, but never attained the heights of the 1918 epidemic when mortality rates ran as high as 70 per cent.

The complication of bacteremia is still little understood and the fatality is more marked when this condition is present. An average of 28 per cent of patients had bacteremia with other suppurative complications.

Patients over the age of 60 fared far less well than younger people. The usual finding was an advanced spread in the lungs prior to hospital admission. Undoubtedly the pulmonary mechanism is influenced by diminution in the vital capacity of the lungs.

Suggested measures for better treatment include an early bacteriological diagnosis. Typing of the pneumococcus is still the quickest way to make a bacteriological diagnosis and may be performed easily by the use of mouse inoculation. Early treatment with symptomatic relief as the target includes the use of oxygen (tent and nasal catheters if necessary), whole blood transfusions and bleeding. Care of the mouth is still considered important. For complete control preventive hygiene measures aimed at the control of the common cold and influenza should do much to decrease the incidence of pneumonia.

* Thompson, R. T.; Ruegsegger, James M.; Blankenhorn, M.D.; and Hamburger, M.: Primary pneumococcal pneumonia at the Cincinnati General Hospital. *J. Clin. Lab. Med.*, 37: (January) 1951.

President's Page

As inevitable as the succession of seasons is the fact that with the coming of spring a new crop of Officers are thrust on the State Medical Society. As your new President, I do not propose any flag waving bursts of prophetic prose to weary you. Neither is it planned to make any sweeping changes in operation or management. Surely, my immediate predecessor, Tom Thornton, has done an outstanding job of clear thinking and planned conservative action during a year when controversy could have easily caused disruption in our ranks. I sincerely hope I may show sufficient tact and leadership to leave this post with the Society in the same unified thinking that appears as I assume office.

We will hope during this year to continue, unabated, our strong and determined efforts against the inroads of socialism, particularly as it pertains to our profession. This, I believe, we can do less militantly than was necessary in the past two years. With a quiet, more personal appeal to our own patients, and with every doctor participating, we can reach a high percentage of the people. For its success, it means a little study as to principles involved and a conscious effort on the part of the individual doctor to disperse this knowledge.

One thing further; you will note that new names, young faces, are appearing as Section Chairmen and as Committeemen. Those who are displaced, I hope, will feel as I want them to feel, that they have completed a job, done well and faithfully. We know that youth errs and we anticipate mistakes. However, the compensation should be manifest in the vigor and liveliness that they will put into their jobs, plus the opportunity for these younger men to develop into leaders in the years ahead.

Your Officers hope that the coming year will be outstanding in the progress of things medical in our Society. We urge your helpful suggestions at all times.

Donald C. Conzett, M. D.
President

NEWS NOTES

From The Committee On Medical Service And Public Relations

DOCTOR-PHARMACIST MEETING

A meeting of the doctors and pharmacists of Benton County was held April 12 in Vinton. This was the thirty-second of a series of doctor-pharmacist meetings which have been conducted throughout the state.

Speakers who appeared before the group were Dr. Otis D. Wolfe, Chairman of the Council, Dr. Fred Sternagel, Chairman of the Committee on Medical Service and Public Relations and Mr. Dallas Bruner, Executive Secretary of the Iowa Pharmaceutical Association. Dispensing laws and general problems of the two professions were topics of discussion.

BLUE SHIELD ESTABLISHES PHYSICIANS RELATIONS DEPARTMENT

Iowa Medical Service (Blue Shield) is in the process of setting up a division of physician relations as a part of its organization. It will be the responsibility of this division to carry out an educational program among the doctors, on Blue Cross and Blue Shield. It will also be expected to further the understanding of the doctors' office personnel.

The department will be staffed with one or two field men who will be in constant contact with the doctors over the state. At present the field secretary for the State Medical Society is on loan to Blue Shield to get the department established and operating. He will continue to serve the State Medical Society on a half-time basis.

It is the hope of the officials of Blue Shield that this physicians relations department will develop and maintain closer contact with the profession than has been the case in the past. It is not definite to what extent Blue Cross will participate in this physicians relations program.

Mr. Woodrow H. Sherin, Executive Director of Iowa Medical Service, attended the annual meeting of the Blue Cross-Blue Shield Commissions, held April 16 to 19, in Biloxi, Miss.

The main function of this meeting was to review the Blue Cross-Blue Shield problems throughout the nation. The main topic, so far as Blue Shield was concerned, was the discussion of service benefits or income ceilings. A report of this portion of the meeting will be published in a later JOURNAL.

SPEAKER'S BUREAU RADIO SCHEDULE

WOI—Thursdays at 11:15 a.m.

THE DRUGS YOU USE

- May 3 Use and Misuse of Drugs
- May 10 Germ Chasers
- May 17 Pain Killers and Sleep Producers

May 24 Laxatives and Indigestion

May 31 Skin Remedies

WSUI—Tuesdays at 11:45 a.m.

KEEPING YOUR BABY WELL

May 1 Premature Baby

May 8 Keeping Our Babies Well

May 15 Breast Feeding Is Best

May 22 Artificial Feeding Can Be Good

May 29 Babies Who Fail to Gain

CLINICOPATHOLOGIC CONFERENCE

(Continued from page 195)

rupture and death. We all know that if those conditions are not treated, death will occur in every case. It is rare, I believe, to find unruptured aneurysms at autopsy.

Dr. Boyd: Dr. Sahs found seven.

Dr. Perret: Yes, but I am sure one of them had ruptured. That is why the patient died.

The operative mortality is high. I do not know the exact percentage, it depends on the various clinics. We have been operating on aneurysms only for the last few years, and I do not think that any clinic has enough data to find out how long patients survive following operations. The operative mortality is about 50 per cent, but if you do not do anything, then you have a mortality of nearly 100 per cent sooner or later.

There are two ways of tackling aneurysm. One is to ligate the internal carotid in the neck. Of course, this will not cure the patient because usually they have enough blood flow from the opposite side to fill up the aneurysm and produce a later rupture. However, in many instances it has been shown that rupture is less likely to occur if the involved carotid has been ligated. Many clinics perform only carotid ligatures and nothing else. We believe that we should try to ligate the aneurysm intracranially and oftentimes this can be done. It can be done if the aneurysm is on the anterior cerebral artery or the anterior communicating artery. Usually those patients remain asymptomatic following surgery. It can be done occasionally if the aneurysm is on the posterior communicating artery. It can be done if the aneurysm is on one of the branches of the middle cerebral artery. However, there oftentimes we have residual hemiparesis or aphasic symptoms, but it is difficult to ligate an aneurysm which would lie at the bifurcation of the carotid on the central portion of the middle cerebral artery because this would produce permanent hemiplegia and aphasia if this is on the left side. However, all these stages, hemiparesis, aphasia, etc., are better than early death, to my point of view.

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. CLAIRE H. MITCHELL, Indianola

President-Elect—MRS. HOWARD W. SMITH, Woodward

Secretary—MRS. RALPH J. SELMAN, Ottumwa

Treasurer—MRS. DWIGHT C. WIRTZ, 449-56th St., Des Moines

AMERICAN MEDICAL EDUCATION FOUNDATION

The Board of Trustees of the American Medical Association, at its meeting in Cleveland in December, established the American Medical Education Foundation and voted to appropriate one-half million dollars as the nucleus of this fund. Increased cost of adequately maintaining medical schools and steady decrease in income have imposed financial difficulties, and if our medical schools are to continue to provide the American people with properly trained physicians, they have to have additional financial support. The American Medical Education Foundation has been chartered as a not-for-profit corporation under the state of Illinois to receive contributions from physicians and friends of medicine. Dr. Elmer L. Henderson, president of the AMA, in his address to the House of Delegates in December, appealed to the medical profession and to the members of the Woman's Auxiliary for support of this project, and asked for contributions to the Foundation. Contributions so received will be distributed to all approved medical schools in the United States for unrestricted use. Each school will be free to determine how and where it can best use its share. Contributions can be sent to the American Medical Education Foundation, 535 N. Dearborn Street, Chicago 10, Ill.—*The Bulletin*, March, 1951.

NURSING STATISTICS

About 40 per cent of the registered nurses in the United States are not nursing.

Twenty per cent fewer students are enrolled than at the end of the war.

There are 506,000 registered nurses; 205,000 are not practicing, although 87 per cent of these are married.

About 100,000 students were enrolled in nursing schools in 1950; 127,000 at the end of the war.

The Army needs 3,000 nurses by June, 1951, so it is understandable why the American Nurses' Association, the American Medical Association and the Army are urging older registered nurses back to practice.—*Capitol Clinic*, February 13, 1951.

Last call for reservations for the twenty-eighth Annual Convention of the Woman's Auxiliary to

the American Medical Association, which will be held at Haddon Hall, Atlantic City, New Jersey, June 11 to 14.

ACTIVITIES OF COUNTY AUXILIARIES

Members of the **Delaware County Medical Society and Auxiliary** met February 21 for dinner at the Glen Charles Hotel in Manchester. Newly elected Auxiliary officers are: president, Mrs. Wilton J. Willett; vice president, Mrs. Paul G. Meyer and secretary-treasurer, Mrs. James K. Stepp, all of Manchester.

Auxiliary members of the **Hamilton County Medical Society** entertained all senior high school girls in the county at a tea April 6. Nurses from the Mercy and the Lutheran Hospitals in Des Moines and from the Webster City Hospital informed the girls of the nursing profession.

The **Auxiliary to the Clinton County Medical Society** was organized March 20 at the Manor House in Clinton. Auxiliary officers chosen are: president, Mrs. Robert J. Nelson; vice president, Mrs. Joseph E. O'Donnell; secretary, Mrs. Donald F. Mirick; treasurer, Mrs. Marcus B. Emmons and parliamentarian, Mrs. Bernard B. Dwyer, all of Clinton.

Fourteen members of the **Marshall County Auxiliary** met at the home of Mrs. M. E. Jeffries February 6 for a dessert meeting. Checks for \$7.50 were voted to each of the hospitals for purchase of a reference book in memory of Dr. Aaron C. Conway. A subscription to *Today's Health* was voted to the high school library. A nurse recruitment tea to be held at the Hotel Tallcorn was planned for late April. Mrs. Harris R. Heise discussed nursing as a career and methods to promote interest in nursing.

Members of the **Polk County Medical Auxiliary** sold handiwork made by Iowa crippled children and adults at the Society for Crippled Children and Adults annual sale in Des Moines.

Mrs. T. L. Trunnel, nurse's recruitment chairman of the **Black Hawk County Medical Society Auxiliary** announced a new aide project by Waterloo high school girl scouts during their March meeting. Twelve girls are now working in a form of nurse's aide program at two Waterloo hospitals. The Auxiliary voted as its next project the presentation of uniforms to the worker.

STATE DEPARTMENT OF HEALTH

Walter Diering

FLOOD BULLETIN

Melting snow combined with spring rains is causing high river stages generally throughout the State. Most of the major streams have been or are flowing bankfull with some flooding reported in low areas.

Sewer systems are heavily loaded with infiltration water and in many instances have been flooded with backwater from swollen streams. Under these conditions, the threat of disease transmission through contaminated water is always present. In view of the flooding that has already occurred and the impending danger of more flooding in certain areas anticipated, the following flood-health information is released:

I. BEWARE OF DRINKING WATER IN FLOODED AREAS

Drinking water contaminated by flood waters may carry disease-producing germs which may cause typhoid, paratyphoid, dysentery, enteritis and other water-borne disease. Public water supplies should be used whenever possible and in no case should drinking water supplies be used that are not known to be safe. *All drinking water of questionable safety or which may have been contaminated by flood water should be boiled at least two minutes.*

II. TYPHOID IMMUNIZATION IN FLOODED AREAS

It is recommended that all persons living in flooded areas, all persons engaged in flood control duties and all persons who may travel in flood areas be immunized against typhoid fever. All individuals are urged to consult their physicians or health officers regarding preventive measures. Communities desiring to set up typhoid immunization clinics may obtain typhoid vaccine from the Iowa State Department of Health, Des Moines, Iowa.

III. BEWARE OF CONTAMINATED FOOD IN FLOODED AREAS

1. *Milk.* All milk used for human consumption should be properly pasteurized. If properly pasteurized milk is not available, it is recommended that the raw milk be brought to the boiling point before use.

2. *Garden Vegetables.* It is desirable that all garden vegetables be well cooked before eating. Vegetables to be eaten raw should be thoroughly scrubbed and rinsed in pure running water. This is especially important for vegetables known to have been flooded.

3. *Home Refrigeration.* Failure of home refrigeration facilities for one day or more may lead to food spoilage. Foods most likely to be affected include cream-filled pastries, tongue, ham, luncheon meats, salads, etc. When this occurs, such foods are not safe and should be destroyed.

4. *Locker Plants.* The Iowa State Department of Agriculture advises that refrigerated locker plants will usually maintain safe temperatures for a period of 26 to 32 hours following a break in power service. Food stored in locker plants can become dangerous to the consumer if the locker room temperature rises above 30 degrees F. Further information on locker plants may be obtained by writing to the Iowa State Department of Agriculture, Des Moines, Iowa.

IV. CLEANUP IN FLOODED AREAS

1. *Wells.* After the flood waters have subsided, all contaminated wells should be thoroughly pumped to remove dirty water and subsequently be disinfected by some chlorine compound. Chlorinated lime (not quick lime or hydrated lime), Clorox, Hilex or similar products may be obtained from most drug and grocery stores. If chlorinated lime is used, mix one-fourth pound with two or three gallons of water before putting into the well. If a laundry bleach is used, two cupfuls may be poured directly into the well. Mixing in the well may be obtained by pouring 10 or 15 gallons of water into the well along with the chlorine solution. Leave chlorine solution in well for at least 24 hours before pumping it out.

2. *Basements.* When the flood water has gone down, scrub the walls with soap and water, then rinse the walls and floor with a chlorine solution. Use the chlorine solution described above.

SCARLET FEVER

Scarlet fever is still with us. The summary of yearly morbidity reports in Iowa from 1930 to date would suggest a greater decrease in case rates for the disease than actually exists. Although the death rate is materially reduced as a result of better medical care and the broad use of antibiotics, the real reduction in cases has not actually paralleled the reduction in death rates. We are getting less of our scarlet fever reported than formerly as the case reports would indicate. Early use of antibiotics frequently arrests scarlet fever to the extent that

the patients show no desquamation, without which many physicians hesitate to make the diagnosis of scarlet fever. The antibiotics also preventing most of the former complications of scarlet fever, further reduce reporting since severe or complicated cases were much more frequently reported than were milder cases that received less medical attention. Further, many cases of septic sore throat and streptococcal sore throat, possibly scarlet fever without rash, are not reported. Many persons, learning that the disease is no longer quarantinable assume it is no longer reportable.

SCARLET FEVER CASES AND DEATHS IN IOWA 1930 TO DATE

Year	Cases	Deaths	Year	Cases	Deaths
1930	2836	68	1941	1910	9
1931	3086	49	1942	1880	9
1932	1917	35	1943	2483	16
1933	1990	45	1944	4530	18
1934	2637	61	1945	2228	10
1935	3771	69	1946	1690	9
1936	5805	83	1947	1399	4
1937	7860	107	1948	1280	2
1938	5744	48	1949	814	7
1939	4009	23	1950	373	0*
1940	2560	21	1951	166†	

* First nine months.

† Through March 24.

Scarlet fever, for many years a non-quarantinable disease in Iowa, is still a placardable disease. Although many communities do not placard the case for the 14 day period of infectivity, we like to see it done. It serves to warn others that an infectious disease exists within the premises, it informs them that the case has been reported and it further indicates that the family has been advised regarding control procedures such as public food handling and school attendance. Cases of streptococcus sore throat, septic sore throat and streptococcal tonsillitis, epidemiologically related to cases of scarlet fever, are subject to the same restrictions as scarlet fever.

Scarlet fever is still a disease that requires early and adequate medical attention. Also it still is a public health problem meriting control procedures.

MORBIDITY REPORT

Diseases	Mar. 1951	Feb. 1951	Mar. 1950	Most Cases Reported From These Counties
Diphtheria	2	0	0	Fayette, Johnson
Scarlet Fever	62	76	57	Black Hawk, Boone, Osceola
Typhoid Fever	2*	0	0	Fayette, Polk*
Smallpox	0	0	0	
Measles	210	72	795	Cerro Gordo, Des Moines, Floyd
Whooping Cough	42	36	34	Boone, Clinton, Linn
Brucellosis	34	30	8	Scattered
Chickenpox	540	409	279	Black Hawk, Des Moines, Woodbury
Meningitis, men.	5	7	4	Dickinson, Muscatine (2), Polk, Wood.
Mumps	310	231	360	Des Moines, Johnson, Linn
Pneumonia	11	4	8	Scattered
Poliomyelitis	6	8	13	Scattered
Rabies in Animals	50	42	18	Polk, Warren, Washington
Tuberculosis	77	84	37	For the State
Gonorrhea	77	53	52	For the State
Syphilis	198	107	143	For the State

* And 2 Typhoid Carriers; reported from Dallas, Henry.

FINAL POLIOMYELITIS SUMMARY FOR IOWA 1950

County	Cases	Case Rate per 100,000	County	Cases	Case Rate per 100,000
Adair	7	57.0	Jefferson	3	19.1
Adams	2	22.8	Johnson	43	94.4
Allamakee	9	55.0	Jones	17	87.6
Appanoose	1	5.0	Keokuk	12	71.6
Audubon	8	69.1	Kossuth	7	26.7
Benton	8	35.3	Lee	53	123.2
Black Hawk	38	38.1	Linn	158	153.0
Boone	8	28.6	Louisa	6	55.1
Bremer	7	37.1	Lucas	6	49.7
Buchanan	11	50.7	Lyon	3	20.3
Buena Vista	7	33.1	Madison	4	30.4
Butler	16	92.3	Mahaska	3	12.1
Calhoun	10	59.5	Marion	6	23.1
Carroll	9	39.1	Marshall	4	11.2
Cass	8	43.1	Mills	5	35.6
Cedar	10	59.5	Mitchell	14	100.8
Cerro Gordo	14	30.6	Monona	13	79.8
Cherokee	3	15.7	Monroe	3	25.4
Chickasaw	9	59.3	Montgomery	5	32.0
Clarke	1	10.6	Muscatine	14	42.9
Clay	14	77.6	O'Brien	4	21.0
Clayton	10	44.4	Osceola	1	9.8
Clinton	30	60.6	Page	16	67.0
Crawford	10	50.7	Palo Alto	8	52.4
Dallas	7	29.5	Plymouth	1	4.3
Davis	4	40.4	Pocahontas	9	58.2
Decatur	15	119.5	Polk	110	48.9
Delaware	8	45.1	Pottawattamie	29	41.8
Des Moines	56	133.1	Poweshiek	1	5.1
Dickinson	8	62.7	Ringgold	1	10.5
Dubuque	16	22.4	Sac	18	104.0
Emmet	1	7.1	Scott	32	32.2
Fayette	12	42.5	Shelby	15	94.3
Floyd	9	41.9	Sioux	4	15.3
Franklin	4	24.5	Story	53	121.3
Fremont	4	32.5	Tama	12	55.4
Greene	6	38.4	Taylor	2	16.1
Grundy	11	80.4	Union	4	25.9
Guthrie	1	6.5	Van Buren	38	345.9
Hamilton	11	56.0	Wapello	12	25.6
Hancock	12	79.5	Warren	6	33.8
Hardin	15	67.6	Washington	18	92.2
Harrison	10	51.2	Wayne	16	136.6
Henry	16	85.6	Webster	10	22.6
Howard	3	22.8	Winneshiek	1	7.4
Humboldt	3	23.0	Winneshiek	44	203.3
Ida	4	37.3	Woodbury	26	25.0
Iowa	12	75.7	Worth	1	9.0
Jackson	8	42.9	Wright	13	66.2
Jasper	8	24.8			
Total Cases For 1950					1399 State 53.6

CORRECTED MONTHLY TOTALS

Monthly totals as given may differ from the final totals listed below, because in this listing duplicates have been removed, delayed cases have been assigned to their proper time period and cases giving changes in diagnosis from poliomyelitis to non-poliomyelitis have been removed.

TOTAL BY MONTHS

January	13	July	178
February	13	August	229
March	5	September	473
April	12	October	285
May	10	November	121
June	26	December	34
Total, 1950			1399

44 deaths first 9 months 1950 (through September)

AGES OF POLIOMYELITIS CASES THROUGH DECEMBER 1950

Less than one year	25	20-24 Inclusive	120
1-4 Inclusive	258	25-29 Inclusive	115
5-9 Inclusive	371	Over 30	153
10-14 Inclusive	202	No age given	29
15-19 Inclusive	126		
Total 1950 Cases			1399

(Youngest 3 days—oldest 89 years)

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

CANCER AS I SEE IT, by Henry W. Abelman, M.D., Philosophical Library, New York, 1951. Price \$2.75.

CORONARY CIRCULATION IN HEALTH AND DISEASE, by Donald E. Gregg, M.S., Ph.D., M.D., Chief Research Physician, Medical Department, Field Research Laboratory, Fort Knox, Ky. Lea and Febiger, Philadelphia, 1950. Price \$4.50.

DIABETES MELLITUS, Principles and Treatment, by Garfield G. Duncan, M.D., Clinical Professor of Medicine, Jefferson Medical College; Director of Medical Division, Pennsylvania Hospital and the Benjamin Franklin Clinic, Philadelphia. W. B. Saunders Co., Philadelphia, 1951. Price \$5.75.

HEART DISEASE, Its Diagnosis and Treatment, by Emanuel Goldberger, B.S., M.D., Associate Attending Physician, Montefiore Hospital, New York; Cardiologist and Attending Physician, Lincoln Hospital, New York; Consulting Cardiologist, St. Joseph's Hospital, Yonkers; Diplomate of the American Board of Internal Medicine; Lecturer in Medicine, Columbia University. Lea and Febiger, Philadelphia, 1951. Price \$10.00.

THE NEUROSES, Diagnosis and Management of Functional Disorders and Minor Psychoses, by Walter C. Alvarez, M.D., Professor of Medicine, Emeritus, Mayo Foundation, University of Minnesota; Emeritus Consultant in Medicine, Mayo Clinic. W. B. Saunders Co., Philadelphia, 1951. Price \$10.00.

PARACELSUS, Magic Into Science, by Henry M. Pachter. Henry Schuman, Inc., New York, 1951. Price \$4.00.

PIONEER DOCTOR, by Lewis J. Moorman, M.D. University of Oklahoma Press, Norman, Okla., 1951. Price \$3.75.

HOSPITAL STAFF AND OFFICE MANUAL, by T. M. Larkowski, M.D., F.A.C.S., Professor of Clinical Surgery, Stritch School of Medicine, Loyola University, Chicago; and A. R. Rosanova, R.Ph., M.D., Clinical Instructor, University of Illinois Medical School, Chicago. Romaine Pierson Publishers, Inc., Great Neck, New York, 1951. Price \$4.95.

SURGICAL FORUM, Proceedings of the Forum Sessions, Thirty-Sixth Clinical Congress of the American College of Surgeons, Boston, Mass., October, 1950. Surgical Forum Committee, O. H. Wangenstein, M.D., Chairman; Warren H. Cole, M.D., Robert E. Gross, M.D., Michael L. Mason, M.D., Carl A. Moyer, M.D. and I. S. Ravdin, M.D. W.B. Saunders Co., Philadelphia, 1951.

A TEXT-BOOK OF X-RAY DIAGNOSIS, by British Authors, Second Edition, edited by S. Cochrane Shanks, M.D., F.R.C.P., F.F.R., Director, X-Ray Diagnostic Department, University College Hospital, London; and Peter Kerley, M.D., F.R.C.P., F.F.R., D.M.R.E., Director, X-Ray Department, Westminster Hospital; Radiologist, Royal Chest Hospital, London. W. B. Saunders Co., Philadelphia, 1951. Price \$15.00.

THE 1950 YEAR BOOK OF ORTHOPEDICS AND TRAUMATIC SURGERY (November, 1949-November, 1950), edited by Edward L. Compere, M.D., F.A.C.S., Associate Professor of Bone and Joint Surgery, Northwestern University Medical School; Chairman, Departments of Orthopedic Surgery, Wesley Memorial and Children's Memorial Hospitals; Consultant, Orthopedic Surgeon, Chicago Memorial Hospital; Consultant in Orthopedics, U. S. Naval Hospital, Great Lakes, Ill. The Year Book Publishers, Inc., Chicago, 1951. Price \$5.00.

BOOK REVIEWS

EYES AND INDUSTRY, by Hedwig S. Kuhn, M.D. (C. V. Mosby Co., St. Louis, \$8.50).

This book, the second edition of treatise entitled *Industrial Ophthalmology*, is likewise written by Dr. Kuhn, a noted industrial ophthalmologist.

It exemplifies the best in the application of ophthalmology to industry. The author presents to the prac-

ticing ophthalmologist the problems that confront industry related to the visual skills of workers. At the same time it presents to industry and the industrial physician the contributions of modern ophthalmology in promoting the safety and effectiveness of the industrial worker.

Subjects covered include visual testing in industry, visual skills, visual standards, industrial eye injury caused by solid bodies, radiation, chemical eye injuries, eye protection, illumination and the blind in industry.—H. H. Smead, M.D.

SEXUAL FEAR, by Edwin H. Hirsch, M.D. (Garden City Publishing Co., Inc., Garden City, N. Y., \$3.00).

Dr. Hirsch has compiled this volume which will appeal to the lay public as well as physicians. He traces his subject from ancient times to the present. This book should assist in neutralizing the ill effects of patients who worry about sexual problems.—E. M. George, M.D.

BRAIN AND INTELLIGENCE: A QUANTITATIVE STUDY OF THE FRONTAL LOBES, by Ward C. Halstead (University of Chicago Press, Chicago, \$6.00).

With the advances of neurosurgery and particularly the application thereof in the treatment of so-called mental diseases, new opportunities have been afforded for the study of human behavior relative to selective ablation of portions of the brain. The issues between neurophysiologists and between psychiatry and neurophysiology have, in the past, given rise to seemingly irreconcilable points of view, but fortunately newer knowledge in both areas has slowly forced methods of investigation requiring concepts capable of resolving the conflicts. Professor Halstead is one of those experimentalists in clinical problems who has sought for techniques which would enable us to move more easily from the universe of physiology to that of psychiatry. This book will stand out as much for this as for any conclusions of fact which the author offers.

He first raises the general question of the structure of biological intelligence, attempting to go beyond the confines of those aspects of intelligence measured by our standard psychometric tests. To do this he arranged a battery of 27 psychological tests involving many parameters of behavior which were given to 237 patients and controls. The raw data was then submitted to a rigorous statistical analysis. Using Thurstone's multiple-factor solution, he obtained a four-factor description of performance on these tests and a means of describing adaptive behavior quantitatively, to yield a concept of biological intelligence. For those interested in problems of methodology and experimental design I believe they will be impressed by what they read. Out of the data obtained on his subjects, the author devised an impairment index designed to measure not the extent of injury topographically, but of disruption of adaptive behavior resulting from brain injury.

It is difficult to be derogatory in one's criticism of a work such as this largely because of the goals of the author and because of his arduous labors. However, one thing impresses this reviewer particularly and that

is in connection with the observations on lobotomized subjects. In spite of the fact that the author's subjects did not show significant impairment indices, I have had ample opportunity, along with others, to see that in many cases of serious mental disorder treated by lobotomy the symptoms are ameliorated by replacing them with different ones which obscure the significance of the operation. In other patients, personality changes are wrought which hardly make us regard them as more adaptable or even socially acceptable. To this extent we must use with caution indices of the kind offered in this book. Their real value lies in their contribution to our technics of study and their stimulus value in forcing us to see new and challenging ways of thinking about old problems.—*S. L. Sands, M.D.*

ESSENTIALS OF ORTHOPAEDICS, by Philip Wiles, M.D. (The Blakiston Co., Philadelphia, \$10.00).

This volume presents in compact form the basic essentials of orthopedic surgery. As usual with British publications the illustrations are excellent. As might be expected, the author presents the British point of view in the treatment of various conditions which is at variance with measures commonly practiced in the United States. Any physician interested in orthopedics will find the book valuable for reference.—*E. M. George, M.D.*

A TEXT-BOOK OF X-RAY DIAGNOSIS BY BRITISH AUTHORS, edited by S. Cochrane Shanks, M.D. and Peter Kerley, M.D. (W. B. Saunders Co., Philadelphia, \$18.00).

This book covers the abdomen and is divided into the alimentary tract, the biliary tract, abdomen, obstetrics, gynecology and urinary tract. In each section a short anatomical description has been given illustrated by radiographs of the normal anatomy of the region concerned. After this foundation, abnormalities are described with excellent illustrations, surgical procedures are discussed and in many cases x-rays are shown of the final results.

There is little to criticize except that positive illustrations are used; they are of excellent quality, however, and do not detract in the least from the diagnostic value of the films reproduced.

This volume is entirely practical and is not only excellent for a radiologist but many features should appeal to the general practitioner and surgeon. All in all, this is one of the better textbooks of x-ray diagnosis.—*F. A. Springer, M.D.*

PROGRESS VOLUME to accompany Hyman's INTEGRATED PRACTICE OF MEDICINE, by Harold T. Hyman, M.D. (W. B. Saunders Co., Philadelphia, \$10.00).

Four years after the original four volume publication, the rapid advances of what the author terms the "golden age of therapeutics" have required the addition of this volume to Dr. Hyman's encyclopedic guide to general medical practice.

Much of this text is concerned with such recent developments as the newer antibiotics, ACTH and cortisone and the anticoagulants. The practical value of this discussion to the practitioner is enhanced by inclusion of dosage forms, names of manufacturers and package information. While emphasis is placed on products having official approval of the AMA's Council on Thera-

peutics, other useful drugs have been included where Council approval is anticipated.

Of the 734 pages of this volume, 165 pages are devoted to a reprint of the general subject index to the first volumes. A separate index to the new volume is included, together with cumulative indices to signs and symptoms and to illustrations in the complete work.—*H. J. Smith, M.D.*

PRINCIPLES OF GENERAL PSYCHOPATHOLOGY, by Siegfried Fischer, M.D. (Philosophical Library, Inc., New York City, \$4.75).

This book is divided into four subjects. The first is called "Fundamentals of Psychopathological Concepts." In this section the various psychological concepts, such as thought, memory, motion, intelligence, etc. are defined, described and differentiated. When controversy is prominent, the author includes several opinions. After elaborating on each of these topics the author describes the disturbances or pathology.

The second subject, "Comprehensible and Casual Connections," is essentially devoted to the description of the author's and other opinions relevant to personality dynamics and for cause and effect sequences involved in producing normal and disturbed behavior. In general the author recognizes a broader etiology than did Freud, and he stresses the importance of the feeling of helplessness in dynamic psychopathology.

The third section is a brief description of the various symptom complexes or syndromes of mental disturbances that tend to occur. Along with the descriptions of groups of symptoms is the list of the clinically established causes of such syndromes.

The fourth part deals with the normal, neurotic and psychopathic personalities and the relation between personality and psychosis.

At times the reading is too pedantic, but in a science as young as general psychopathology and in dealing with a subject as intangible as psychological concepts, it soon becomes apparent that to write or to read about psychopathology in a comprehensible fashion requires precise definitions and their consistent use. Dr. Fischer does this admirably well.—*W. Macy, M.D.*

RESEARCHES IN BINOCULAR VISION, by Kenneth N. Ogle, Ph.D. (W. B. Saunders Co., \$7.50).

This book is a summary of the 18 years of research in binocular vision done at the Dartmouth Eye Institute at Hanover, N. H. Part one, which treats of the organization and sensory cooperation of the two retinas and part two, which treats of the fusional processes in binocular single vision, are fairly easy to read and will interest those who are concerned with these problems. The phenomenon of fusion itself is particularly well described. The remaining two-thirds of the book present the problems arising in binocular vision when changes are made in the relative magnification of the images of the two eyes together with the theoretical and practical bases for their correction. This portion of the book is difficult but rewarding in better understanding of topics such as distortions in the stereoscopic perception of space.

A most complete bibliography is attached and the numerous diagrams and drawings are helpful in comprehending the complicated problems in the field of binocular vision.—*A. H. Downing, M.D.*

SOCIETY PROCEEDINGS

MEETINGS

Black Hawk

Dr. Charles B. Huggins, Professor of Urology, Department of Surgery of the University of Chicago, spoke on "Cancer of the Prostate Gland" at a regular meeting of the Black Hawk County Medical Society April 6 at the Elks Club in Waterloo. The discussion was led by Dr. Charles McMartin, Omaha and Dr. Nathaniel G. Alcock, Iowa City.

Iowa Urological Society

The semi-annual meeting of the Iowa Urological Society was held April 7 at the Schoitz Memorial Hospital and Hotel Russell-Lamson in Waterloo. State Society members participating in the program were Dr. James H. Hoskins, Des Moines; Dr. Raymond G. Bunge and Dr. Nathaniel G. Alcock, Iowa City.

Johnson

The annual joint meeting of the Johnson County Medical Society and the Johnson County Dental Society was held April 4 at the Hotel Jefferson in Iowa City. Dr. A. K. Fisher, Professor and Head of Oral Pathology, SUI College of Dentistry, spoke on "Some Diseases of Prehistoric Wisconsin Indians."

Marion

The Marion County Medical Society and the medical staff of the Veterans Administration Hospital, Knoxville, held a joint dinner meeting March 27 at the Hospital. Dr. Robert G. Carney, SUI Assistant Professor of Dermatology and Syphilology, spoke on "Modern Treatment of Common Skin Diseases." Dr. Titus C. Evans, of the SUI Department of Radiation Research, spoke on "Applications of Radioactive Isotopes in Medical Research." Guests included physicians from Oskaloosa, Albia and Chariton.

Polk

The Polk County Medical Society held a Cancer Institute April 18 at the Hotel Savery in Des Moines. Speakers included on the program were: Dr. Charles L. Eckert, St. Louis; Dr. Joseph H. Burchenal, New York City; Dr. Harold L. Stewart, Bethesda, Md. and Dr. Walter L. Palmer, Chicago.

Shelby

Dr. Madelene Donnelly, State Director of Maternal Hygiene and Child Welfare of the State Department of Health, spoke to members of the Shel-

by County Medical Society March 21 at the Field Club in Harlan.

Southwestern Iowa Medical Society

The bi-monthly meeting of the Southwestern Iowa Medical Society was held March 28 at the Iowan Hotel in Creston. Doctors from Union, Adair, Adams, Cass, Clarke, Decatur, Madison, Ringgold and Taylor counties attended the meeting. Dr. Arthur G. Lueck, Des Moines, spoke on "The New 'Wonder Drugs'—ACTH and Cortisone."

Wapello

Dr. Sidney Brody of Ottumwa was elected president of the Wapello County Medical Society at the Society's annual meeting April 3 at the St. Joseph Hospital in Ottumwa. Other officers elected are: vice president, Dr. Dennis G. Emanuel and secretary-treasurer, Dr. Edward B. Hoeven, both of Ottumwa.

Woodbury

The Woodbury County Medical Society met April 4 at the Mayfair Hotel in Sioux City to discuss plans for the Annual Meeting. Plans were also discussed for the establishment of an emergency medical service. The purpose of such a service would be to furnish doctors for patients not acquainted with the doctors of the city.

PERSONALS

Dr. Edward R. Gann has begun the practice of medicine in Sigourney. A 1943 graduate of the SUI College of Medicine, Dr. Gann had been head physician at the Oakdale sanatorium for three years.

Dr. Joseph W. Kresock, formerly of Pittsburgh, Pa., has joined the staff of the West Davenport Clinic as a pediatrician. Dr. Kresock was graduated from the Temple University Medical School in 1945.

DEATH NOTICES

Dr. John Albert Dulin, 76, who practiced medicine in Sigourney for 43 years, died in Mount Pleasant April 2 of bronchial pneumonia. Born near Martinsburg, he was graduated from the State University of Iowa College of Medicine in 1903. Dr. Dulin was a member of the Keokuk County and Iowa State Medical Societies.

Dr. George William Gilfillan, 51, Bloomfield physician and surgeon, died March 28 in Ottumwa

following a short illness. Born in Mount Pleasant, he was graduated from the State University of Iowa College of Medicine in 1924. Dr. Gilfillan was a member of the Davis County and Iowa State Medical Societies.

Dr. Ray A. McLean, 73, Fayette physician since 1906, died March 17 of a heart ailment, following a short illness. Born in Volga, he was graduated from the State University of Iowa in 1906. Dr. McLean was a life member of the Fayette County and Iowa State Medical Societies.

Dr. Robert P. Plimpton, 80, for many years a practicing physician in Denison, died March 10 in a Jacksonville, Fla., hospital. A native of Denison, he was graduated from the Chicago Homeopathic Medical College in 1900. Until his retirement in 1950, Dr. Plimpton was a member of the Crawford County and Iowa State Medical Societies.

Dr. Maurice Scanlan, 76, DeWitt physician for more than 50 years, died April 4 in a Davenport hospital. Born in Lost Nation, Dr. Scanlan was graduated from the Rush Medical School, Chicago, in 1900. Dr. Scanlan was a member of the Clinton County and Iowa State Medical Societies.

Dr. Jesse Clyde Waddell, 69, Paton physician, died March 20 in a Fort Dodge Hospital. Born in Kirkville, he was graduated from the College of Physicians and Surgeons in 1907. Dr. Waddell was a member of the Greene County and Iowa State Medical Societies.

Dr. Charles L. Worley, 52, Ottumwa physician, died March 17 in an Ottumwa hospital following a heart attack. Born in Emmetsburg, Dr. Worley was graduated from the State University of Iowa College of Medicine in 1933. At the time of his death, Dr. Worley was president of the Wapello County Medical Society and a member of the Iowa State Medical Society.

ROSTER OF IOWA PHYSICIANS IN MILITARY SERVICE

As of April 15, 1951

Ackerman, J. H., Clarksville
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Alberts, M. E., Des Moines
(Des Moines).....Lt. (jg), U.S.N.R.
Ashby, J. D., Davenport
(Battle Creek, Mich.).....Major, A.U.S.
Bartholomew, R. D., Lake City
(Oakland, Calif.).....U.S.N.R.
Bartley, R. L., Sully
(Pensacola, Fla.).....U.S.N.R.
Benge, D. K., Dows
Camp, J. R., Thompson
(San Diego, Calif.).....Lt. (j.g.), U.S.N.R.
Carroll, T. J., Sibley.....

Carson, R. W., Winterset
(APO San Francisco, Calif.).....1st Lt., A.U.S.
Coyne, K. M., Burlington
(FPO San Francisco, Calif.).....Cmdr., U.S.N.R.
Dalager, R. D., Ottumwa
(Junction City, Kan.).....A.U.S.
Davidson, M. C.
(APO New York, N. Y.).....Lt. Col., A.U.S.
Fitch, R. E., Des Moines
(Des Moines).....1st Lt., U.S.A.F.
From, Paul, Des Moines
(Lackland Field, Texas).....1st Lt., A.U.S.
Goenne, W. C., Jr., Davenport
(Tacoma, Wash.).....Major, A.U.S.
Johnson, F. N., Madrid
(San Antonio, Texas).....1st Lt., A.U.S.
Johnson, M. H., Iowa City
(Tacoma, Wash.).....Capt., A.U.S.
Keil, P. G., Des Moines
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King, R. E., Des Moines
(Camp Polk, La.).....Capt., A.U.S.
Krause, R. E., Ottumwa.....
Kurth, R. J., Waterloo.....A.U.S.
Landis, S. N., Des Moines
(Olathe, Kan.).....Major, U.S.A.F.
McCrary, W. A., Lake City
(Fort Riley, Kan.).....1st Lt., A.U.S.
Mangan, J. T., Forest City (FPO San Francisco, Calif.)
Marquis, F. M., Waterloo.....A.U.S.
Merkel, B. M., Des Moines (Des Moines).....Col. A.N.G.
Mitchell, R. C., Iowa City
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Piburn, M. F., Preston.....1st Lt., A.U.S.
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Ruble, R. L., Nevada (Camp Chaffee, Ark.).....A.U.S.
Schultz, M. H., Waterloo
(Weaver, S. D.).....Capt., U.S.A.F.
Simonsen, M. H., Sioux City
(Oakland, Calif.).....Lt., U.S.N.
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(Fort Jackson, S. C.).....Capt., A.U.S.
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Stutsman, R. E., Washington
(San Diego, Calif.).....Cmdr., U.S.N.
Taylor, H. N., Iowa City.....
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Thomas, J. H., Sibley.....U.S.A.F.
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Tyler, D. E., Shenandoah.....
von Lackum, L. F., Oelwein
(Oakland, Calif.).....Lt. (jg), U.S.N.R.
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Wehrmacher, W. H., Iowa City
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Woolfolk, J. H., II, Waterloo
(Weaver, S. D.).....U.S.A.F.
Zeilenga, R. H., Orange City.....1st Lt., U.S.A.F.

* Deceased.

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GYNECOLOGIC ENDOCRINOLOGY IN GENERAL PRACTICE*

WILLARD M. ALLEN, M.D.,**
ST. LOUIS, MO.

Gynecologic endocrinology, or the physiology of reproduction, dates back to about 1900. Dr. G. Born, an embryologist, got the idea that the ovaries probably produce something other than eggs. He suggested to a young German gynecologist, Ludwig Fraenkel, that they study this question in the rabbit. What Fraenkel actually did was to remove the ovaries of rabbits in the early stages of pregnancy, and what he found was simply that the removal of the ovaries invariably terminated the pregnancy. That was a completely unorthodox idea, and for about ten years in the German literature we find arguments regarding Fraenkel's observations in medical societies such as this. Most of the doctors, of course, were complete unbelievers; they could not accept the idea that the ovary had an endocrine function which in some way was related to the continuation of pregnancy. The idea was quickly dropped. The fact was established but few people paid any more attention to it.

Somewhat later, Iscovesco, a French biochemist, began extracting ovaries to see what could be obtained from them, and found that extracts of ovarian tissue contained something which, when administered to immature animals, such as rabbits, produced rather rapid and striking growth of the uterus. In the search for this biologically active substance other less expensive sources were found. The human placenta proved to be a good source but no real progress was made in the isolation of the active principle until Zondek found the ideal source, namely, the urine of pregnant women. Zondek's discovery was made in 1927 and by 1929, due to brilliant work by Doisy, Laqueur, Butenandt and Marrian, the estrogenic hormone had been isolated and its structure determined. The speed with which the final isolation of the

estrogenic hormone was accomplished was actually more apparent than real. Several years of painstaking work were done, by Edgar Allen especially, in developing a suitable test animal. He devoted several years to the study of the estrous cycle of the mouse as a result of which he saw the relationship between follicular growth and the cytological changes in the vagina. His vision enabled him to see that the ovarian hormone, which so many had sought to isolate, could be assayed by testing its effect on the vaginal detritus of the castrated rat or mouse. The development of a simple test for activity and the discovery of a cheap, readily available source—pregnancy urine, were the factors which brought the search for the ovarian hormone to a fruitful termination.

The estrogenic hormone was so named because of its ability to produce the growth changes which occur in the reproductive organs at the time of estrus. The name is a misnomer, however. The estrogenic hormone produces the anatomical changes which are associated with heat, to be sure, but it does not regularly produce the psychic stimulus for mating. The hormone which produces the desire to mate is the other hormone elaborated in the ovary, progesterone. But progesterone is ineffective in this regard unless the animal is at the same time under the influence of estrogen.

In the search for the estrogenic hormone the observation originally made by Fraenkel, namely, that the ovaries were essential to the continuation of pregnancy, was overlooked. It was only after a more detailed study of the estrogenic hormone had been made that it became obvious that this hormone did not have the biological properties necessary to maintain pregnancy in recently ovariectomized pregnant rabbits. Yet, the hormone presumably removed by castration during pregnancy should have the ability to maintain pregnancy after removal of the ovaries. As a result of the review of the deficiencies of the biological properties of the estrogenic hormone the second ovarian hormone, progesterone was discovered. But the brief statement does not do justice to the event. This hormone as we all now know is produced by the corpus luteum. Long before the hormone was isolated its supposed biological proper-

* Presented at the Centennial Session of the Iowa State Medical Society, Burlington, Iowa, April 23-26, 1950.

** From the Department of Obstetrics and Gynecology, Washington University School of Medicine, St. Louis, Missouri.

ties were well known because of careful work showing the relationship between the corpus luteum and the changes which take place in the endometrium in the early days of pregnancy. This knowledge was all available in 1929 when the active search for the corpus luteum was begun, mostly because of work done in the guinea pig by Loeb in 1907, in the rabbit by Ancel and Bouin in 1910, in the domestic pig by Corner in 1917 and work in the rhesus monkey done by Corner and by Hartman in the early twenties. It was Corner who had sufficient vision to see that the hormone of the corpus luteum had not as yet been isolated, and it was he who knew enough of the cytology of the endometrium to devise the test animal which made possible the isolation of progesterone in the short span of about five years.

I have given you this short historical account of one of the fascinating developments in modern biology only to remind us that when we utilize these hormones in treating our patients we should give homage to the group of great scientists who, through a combination of wisdom, skill and good fortune have made our treatment possible. No physician today can call himself an educated man in affairs medical without having a speaking acquaintance with the steroids!

Now we must get on with the more practical aspects of the subject and devote a few moments to a discussion of the human reproductive cycle. The cycle in the human female is divided into two parts. The first part is called the follicular phase. If the cycle is four weeks in duration this phase lasts two weeks and is primarily under the influence of the estrogenic hormone. At the mid-point of the cycle ovulation occurs as a result of stimulation of the ovary by anterior lobe hormones. The follicle then ruptures and the egg is discharged. Certain changes take place in cells lining the graffian follicle and the corpus luteum is formed which produces progesterone. If the egg is not fertilized the corpus luteum regresses in about two weeks, the endometrium is shed and a new cycle begins. If the egg happens to be fertilized the corpus luteum continues to produce progesterone for at least two or three months in the woman but, unlike the common laboratory animals in which the ovaries are necessary throughout pregnancy, the ovary then becomes unimportant in so far as the continuation of pregnancy is concerned. In the woman nature has improved upon the situation found in many animals. She has provided an extra-gonadal source for the sex hormones in the placenta. Pregnancy in the woman becomes a self-propagating mechanism, hormonally speaking, after the second or third month.

The cycle just outlined is ovulatory in nature and during it the endometrium is put through the normal sequence from the resting to the pro-gestational type by stimulation first, by estrogen and, in the second half, by estrogen and progesterone acting simultaneously. Then, pregnancy hav-

ing failed to occur, the corpus luteum stops functioning and the menstrual period occurs because of progesterone deficiency. All cycles are, however, not ovulatory in nature. Cyclic bleeding, similar in every overt way with that produced by involution of the corpus luteum, can occur in the complete absence of a corpus luteum. The bleeding which occurs in this type of cycle occurs from an interval type of endometrium. It is an incomplete cycle, one in which progesterone has not been acting. The anovulatory cycle is hormonally quite different from the ovulatory cycle and much needless bickering has been caused thereby. Some insist that the bleeding of the anovulatory cycle is not menstruation. If not, what is it? The facts are simple. Cyclic bleeding can be produced with ease in ovariectomized women simply by the administration of estrogen for three weeks. Estrogen withdrawal bleeding occurs one week later from an endometrium histologically identical with that found in the anovulatory cycle. Similarly a 'synthetic ovulatory cycle' can be produced by giving estrogen and progesterone, bleeding being produced by withdrawal of progesterone. The vascular changes which are related to the two types of bleeding are identical. Hence, there seems no sound reason for not considering both types of bleeding as menstrual bleeding.

The complex nature of the menstrual cycle, both ovulatory and anovulatory, provides plenty of opportunity for disturbances in menstrual pattern. The menstrual period is like a buoy, bobbing up and down, telling us what it can regarding the currents underneath but, like a buoy, it can tell us nothing without some specific information regarding the reasons for it. We must know something about the causes for bleeding, the kinds of disturbance which occur at various times during the reproductive years, and something about the aberrations in function which require treatment. Such is the nature of the problem and, thanks to a wealth of study over the past 25 years, the safe and sane routes are fairly well charted.

Menstrual disturbances are particularly apt to occur during the pubertal years. The adolescent girl does not change from child to woman overnight. It takes several years to grow up physically as well as mentally and it is the wise parent or physician who will drift with the current through these turbulent years. Little is gained by trying to make irregular periods regular, to induce periods when there is a temporary lull in ovarian activity, or to even worry about the mild obesity or emotional instability which are a part of adolescence. In a few years, barring misfortune, the endocrine glands will come into tune, the starts and stops of adolescence will disappear and the girl will become a woman, ready for the next hormonal upheaval, pregnancy. There are, however, times when endocrine activity seems to get mired in its own complexity. Like a boat in a whirlpool, it goes round and round, getting no-

where, when a gentle shove at the right time and in the right direction will start it again along the proper route.

As I have intimated above, many of the cycles during adolescence are undoubtedly anovulatory. This incomplete cycle causes little trouble unless a static condition occurs in which estrogen is being produced in a non-fluctuating manner for too long a period of time. Then hyperplasia of the endometrium develops and prolonged and persistent bleeding may be the result. Since the classical work of Schroeder in 1917 it has been known that the ovaries in this condition contain no corpora lutea; they contain only follicles in the various phases of growth maturation and regression. Either the stimulus to ovulation is not quite adequate or the ovary is not mature enough to respond by ovulation. At any rate it appears that a vicious cycle between the ovary and pituitary is initiated, perhaps through a hormonal accident, in which the estrogen produced by the ovary may prevent the pituitary from giving that sudden surge in excretion of gonadotrophic hormone which induces ovulation and the formation of the corpus luteum.

The treatment of functional uterine bleeding, where it is due to failure of ovulation, has now become fairly well standardized. The older procedures have become obsolete. The oldest of these methods is the use of X-ray or radium. Small amounts of irradiation destroy the more developed graffian follicles and thereby produce ovarian deficiency, the excessive bleeding ceases and the hope is that the amount of irradiation used will not permanently damage the ovary. This method is seldom used because a similar depression of the ovary can be produced more safely by judicious use of the sex hormones. A second method of treatment employs gonadotrophic hormones. This should be the ideal method but it has been generally unsuccessful. If a gonadotrophic hormone would induce ovulation in the woman it would be the ideal treatment but thus far the proper hormone or combination of hormones has not been discovered. Chorionic gonatrophin does induce ovulation in some animals but it certainly does not usually produce ovulation in the woman. In fact, the prolonged use of this hormone may even be harmful. Like X-ray it produces widespread involution in the follicular apparatus. This may be beneficial insofar as the functional bleeding is concerned but it is not a desirable change in the ovary. It should be said in passing, however, that chorionic gonadotrophin does favorably affect the corpus luteum once the corpus is formed. The primary deficiency in functional uterine bleeding is, however, a failure of ovulation so that it is not surprising that chorionic gonadotrophin is generally not beneficial.

The satisfactory methods of treating functional bleeding utilize the female sex hormones and fall into two general classes. The rationale behind each is actually quite different. The primary disturb-

ance in the ovary leads to the production of too much estrogen for too long a period. A better way of stating the problem is to say that the natural sequence of estrogen followed by estrogen and progesterone does not occur. The disease can, therefore, be looked upon as one due to hyperestrinism, but not necessarily implying a higher production of estrogen than normal, or as one due to a lack of progesterone. Either concept makes possible rational treatment with the sex hormones. The use of progesterone is the most logical because the disease is due to progesterone deficiency. Also, progesterone tends to inhibit and alter the effects of estrogen. The effect of progesterone on the pituitary gland is uncertain, however. Testosterone can be used because it inhibits the stimulating effects of estrogen and also because it suppresses the pituitary and causes temporary inhibition of ovarian activity. The use of estrogens would seem paradoxical. If the disease is due to hyperestrinism, how could more estrogen be helpful? The fact remains that estrogen is beneficial although the exact explanation for the immediate effect remains unexplained. The later effects are more readily understood, however, since estrogen in suitable dose inhibits the output of follicle stimulating hormone and hence suppresses ovarian activity. The difference in these methods of treatment is simple. When using pure substitution therapy, progesterone, physiological doses are used. Whereas when using estrogen or testosterone, several times the physiological dose is necessary in order to produce pituitary inhibition.

The details of the procedures which are ordinarily followed in the treatment of endometrial hyperplasia with the sex hormones are simple and straightforward. After bleeding has been in progress for two or more weeks therapy is begun. If progesterone is to be used, 10 mgm. daily are given intramuscularly for six days. Bleeding ordinarily decreases during the period of injections but there is almost always an exacerbation of bleeding beginning 36 to 48 hours after the last injection. This bleeding is due to progesterone-withdrawal and usually lasts from five to eight days. During this bleeding the hyperplastic endometrium is effectively desquamated. This corrects the pathological condition in the uterus and temporary relief is achieved. Fortunately, the result is frequently more permanent since many patients will have normal cycles for many months after a single course of treatment. The explanation for the appearance of normal cycles is rather obscure but it seems probable that progesterone in some way alters for the better the pituitary-gonadal balance. There are also other ways of giving progesterone. A larger dose of 25 mgm. may be given daily for three days, or the preparation for buccal absorption may be used at a higher level of dosage, usually 40-50 mgm. daily for six days. The closely related compound, anhydrohydroxy progesterone is equally effective at similar

dosage levels. The end result is usually the same regardless of the method of administration.

The use of estrogens must follow a somewhat different pattern. The dose needs to be larger and the duration of treatment longer. The customary dose is at least ten times the physiological dose. In effect this means that five miligrams or more of stilbestrol by mouth or the biological equivalent of natural estrogens should be used. (About 0.5 mgm. of stilbestrol daily is enough to relieve the symptoms of estrogen deficiency, as in the menopause.) The best results are obtained if the estrogen is given for two to three weeks. Ordinarily bleeding ceases soon after the beginning of treatment although a small amount of pinkish discharge may persist. At the conclusion of the period of treatment estrogen withdrawal bleeding occurs but, unlike progesterone-withdrawal bleeding, which begins in 36-48 hours, it begins in five to seven days. With this type of treatment the immediate problem of bleeding is satisfactorily controlled and normal cycles frequently reappear.

The biological effects of estrogen and progesterone on the endometrium have also made possible a simple and satisfactory approach to the problem of secondary amenorrhea. There are, of course, many possible causes for secondary amenorrhea, but most of these merge ultimately in their effect on the ovary. Failure of ovulation may produce amenorrhea, but the condition of the reproductive tract will depend on how much estrogen is being produced. In some cases, the vaginal mucosa is well stimulated and the uterus remains normal in size. A vaginal smear, stained for glycogen by the iodine-vapor technic, will usually serve to establish this fact. This type is frequently seen in girls in their "teens" who have episodes of amenorrhea lasting several months at a time. The method of treatment is simple. Since the endometrium is already under the influence of adequate amounts of estrogen, the giving of a short course of progesterone will induce progestational changes in the endometrium and upon withdrawal of progesterone an induced menstrual period occurs. Here too, as in the treatment of endometrial hyperplasia, it is not necessary to give the hormone longer than a few days. In general, however, a total dose of 50-75 mgm. should be given. This can be given in three days or spread over a week. Following the induced period, regular cycles may be resumed but even if they do not, the induced period serves to satisfy the girl that she can menstruate and it may allay any fears which she may have regarding a possible defect in her procreative ability. This point may seem trivial but it certainly is not. When the young woman approaches the time for marriage the presence of normal periods is a good emotional stabilizer. Whereas, the absence of periods or marked irregularity may cause a good deal of apprehension regarding her capacity to function as a normal woman. The in-

duction of a period will convince her, perhaps unjustly, that all is well.

The problem of secondary amenorrhea is, however, not immediately solved in all cases by the use of progesterone. If the ovarian activity is at such a low level that little estrogen is being produced it will be manifested by an inadequately stimulated vaginal mucosa and the administration of progesterone will not produce a menstrual period. In fact, one of the simplest ways of appraising the adequacy of endometrial stimulation by estrogen, is to give an adequate course of progesterone. If no withdrawal bleeding takes place it is presumptive evidence of estrogen-deficiency. In cases of this sort, it may seem wise to induce a period. The induction of such a period can be accomplished in either of two ways. The simplest procedure is to give estrogen either orally or intramuscularly for three to six weeks. If the dose has been adequate, estrogen-withdrawal will be followed by a menstrual period. The other method is to give estrogen for approximately four weeks and to include in the last week of the treatment a course of progesterone. This will be followed promptly by a period. It should be pointed out, however, that amenorrhea accompanied by marked estrogen deficiency is a much more serious problem than where there is little or no estrogen deficiency, especially if the condition exists in a young woman. The reason for this should be obvious. In the one, the ovary is still functioning even though on a sub-ovulatory level, whereas, in the other, the ovary is not functioning. In all cases of marked ovarian deficiency, the outlook for return of normal ovarian activity is poor, unless the deficiency is due to some readily correctible condition such as severe malnutrition, emotional disturbance or hypothyroidism.

The beneficial effects of sex steroids in treating the functional disturbances of adolescence should not be permitted to obscure the more general aspects of the problem. Ovarian dysfunction is apt to occur in patients who have hypothyroidism or who are chronically ill or malnourished. A great deal has been written about the beneficial effects of a liberal use of vitamins, iron and a good diet. This is, of course, fundamentally sound and the physician should not withhold such measures. The supportive treatment may have more benefit in the ultimate cure than the use of the sex steroids for the immediate condition. A reminder should also be made of the possibility that there are causes, other than ovarian dysfunction, of bleeding in girls and young women, such as thrombocytopenic puerpera, myoma uteri and even cancer of the cervix.

Finally, another type of ovarian disturbance is seen in the condition of delayed puberty. This raises the question of the normal time when menstrual periods should appear. Ordinarily the onset of menstruation at any time between 10 and 17 years can be considered normal. There need be no

worry regarding failure of sexual development prior to 15. However, if a girl shows no evidence of development by that time a strong suspicion of ovarian or pituitary deficiency should be entertained. Discussion of the problems of precocious or delayed puberty is outside the scope of this paper. However, it should be remembered that the production of sexual development by estrogens can be helpful to the physical well-being and morale of the girl who may be destined never to have spontaneous normal puberty. A word, too, needs to be said about precocious puberty in girls. Most cases belong to the so-called constitutional type, i.e., normal development occurring at an abnormally early age. No treatment is satisfactory and actually none is necessary because these girls grow into normal women. A few such cases are due to granulosa cell tumors of the ovary but those due to tumors are many times less common than those of the unexplained constitutional type.

Once puberty is passed and the growing girl has become a woman, disturbances of menstruation disappear for the most part. The cycles continue in a fairly regular manner, except as they may be disturbed by temporary illness or pregnancy, until the years immediately preceding the menopause. Then, of course, irregularity, functional bleeding and amenorrhea again return as the ovary begins to "run down" or "wear out." During the active reproductive years between the ages of 20 and 40 it is always dangerous to assume that any derangement of menstrual pattern, or any abnormal bleeding, for that matter, is due to ovarian dysfunction, especially if it occurs in a person who has been having normal menstrual periods. Abnormal bleeding under such circumstances is more likely due to abortion, ectopic pregnancy or tumors than to ovarian dysfunction and the physician must be wary or he will make truly serious mistakes in diagnosis and treatment. Every gynecologist sees patients who have received hormonal therapy for amenorrhea due to pregnancy and for bleeding due to cancer of the cervix. Such mistakes are not ordinarily due to ignorance; they are usually due to carelessness. In the premenopausal period the problems become even more treacherous because then abnormal bleeding becomes common—and most of it is not due to tumors. Yet failure to recognize the true cause of the bleeding may cost a patient her life.

The menopause is, of course, the best understood aspect of ovarian dysfunction. The reasons for failure of ovarian activity remain unknown although it seems more than probable that the ovary stops function because it is worn out. Certainly it can be said with no equivocation that the ovary in the aged person contains no graffian follicles, no ova and, presumably, no cells which are capable of responding to gonadotrophins. At birth the ovary contains a great abundance of ova, enough to last throughout a natural lifetime. A large portion of the ova disappears during childhood, but

even so, there are enough present at puberty to last much longer than the normal span for 30 or 40 years of ovarian activity assuming, of course, that only one or two are shed at each ovulation. All of the follicles and the ova that are in them do not, however, reach maturity. For every follicle which is destined to mature and rupture there are doubtless several which go through partial maturation and then regress. This explains the presence in the ovary at all times of many atretic follicles. In fact, there is experimental evidence that a stimulus inadequate to induce ovulation produces changes in the follicle which make it impossible for an adequate stimulus at a later date to alter those follicles in any way. For example, an adequate amount of chorionic gonadotrophin will produce ovulation in the rabbit. A smaller dose will cause growth of the follicles without producing rupture. A few days later an adequate dose will again produce ovulation but the follicles which rupture are new ones and not the ones stimulated by the inadequate dose. This response doubtless explains why the large number of potential follicles never reach fruition, and it may explain why the ovary seems to wear out long before the end of life. The woman is seemingly protected by nature against the hazards of childbearing in the later years of life by the simple expedient of ovarian deficiency. The male of the species, of course, is not similarly affected by the aging process. There are many instances of men proving themselves fertile at advanced age.

The treatment of the menopause, from the hormonal standpoint at least, is relatively easy. The disturbance is precipitated by disturbed ovarian activity which usually is manifested by estrogen deficiency. The natural treatment, therefore, is one of replacing estrogens. The menopausal syndrome is, however, not exclusively brought about by ovarian deficiency. The advent of irregular or abnormal periods serves as a blunt reminder to the woman that middle age has come. This is usually an unwelcome event and the reaction which the particular patient experiences is conditioned to a considerable degree by her philosophy of life, or so it would seem. The emotionally stable person accepts the inevitable with grace and a few hot flashes. In fact, she may welcome "the change," especially if her family is blessed with children and grandchildren. However, in this modern age where female beauty and the ever young look are held out as bait, the modern woman comes to believe that perennial youth is not a dream but is something that can be bought at the cosmetic counter or at the doctor's office. The saying, "Oh Doctor, I look so much older than last year! What are *you* going to do about it?", is heard all too often. The net result of all of this is an office filled with patients, some needing replacement therapy, some needing psychotherapy and many needing just a friendly and sympathetic talk regarding the "facts of life." The physician who elects to treat

patients who may be having menopausal symptoms must be more than endocrinologist or a gynecologist. He has to be the modern equivalent of the venerable practitioner of the past, a man who can listen and comprehend.

There are a few rather practical aspects of the menopausal syndrome which need to be appreciated. First, many of the symptoms precede the actual cessation of the periods by several years. Second, the symptoms are intermittent so that continuous treatment is not necessary. Third, the so-called classical symptoms are not always due to ovarian deficiency. Fourth, there are no laboratory tests which are of much real value in appraising the need for therapy. This last may seem surprising but more sober thought makes this obvious. For example, the vaginal smear may show deficient cornification but that is no reason for treatment because postmenopausal patients have an atrophic smear without symptoms. Similarly a high FSH level is of no value either. The level remains high for years after the menopause is over. The decision regarding the need for treatment has to be made, for the most part, solely on a careful appraisal of the patient's symptoms. The adequacy of the treatment can be measured, to be sure, by studying the effects of the administered estrogen on the vaginal smear or on the urinary FSH levels but even this is seldom worth the expense and effort. This rather fascinating aspect of modern therapy still remains largely on an empirical and day to day basis.

The actual treatment of the menopausal syndrome is not complicated. The general effectiveness of the estrogens is so well established that it may seem unnecessary to elaborate at all on the details whenever treatment seems indicated, and among the educated clientele this is usually based on the patients own evaluation of her symptoms. The only decisions necessary pertain to dosage, type of estrogen and route of medication. The dosage required is not large. The amount required for adequate stimulation of the vaginal mucosa and endometrium in castrated individuals has been carefully worked out. Usually 0.5 mgm. of stilbestrol or its biologic equivalent of other estrogens is sufficient to stimulate the endometrium so that withdrawal bleeding will occur on termination of treatment in the ovariectomized woman with an intact uterus. Doses of this order of magnitude will usually control menopausal symptoms. Actually if this amount, or perhaps twice this amount, fails to control the symptoms, doubt regarding the origin of the symptoms should be considered. Certainly there is no justification for the use of 5.0 or 10.0 mgm. daily of stilbestrol in the treatment of the menopause. The preparation to be used depends largely on the whims of the physician. He has to decide whether he will use natural estrogen or synthetic estrogens and whether he will use oral therapy, buccal therapy or intramuscular therapy or perhaps pellets. Again, there is certainly no

good scientific reason for using injections. The use of injections is still so prevalent, however, that many patients have to be told that "shots" are no better than oral medication. The oral dose of natural estrogens has to be from 10 to 20 times the intramuscular dose for most preparations but, fortunately for the patients, the pharmaceutical concerns have been able to reduce the cost to the point where the oral route is no more expensive than the intramuscular route. The decision regarding the relative merits of natural and synthetic estrogen is more difficult. My personal opinion is that natural estrogens, no matter how administered, are superior to stilbestrol and the numerous related compounds that are now available. It is difficult to evaluate this point, however, because the evaluation has to be based on subjective relief of symptoms. In any case, the proper dose of whatever preparation used is the smallest amount which alleviates the symptoms.

This completes my discussion relating to the disturbances of the woman as they may be related to or produced by the ovaries. As the person ages certain special problems relating to ovarian function are prone to occur. Within a few years of the completion of the menstrual cycles, ovarian activity ceases and the usual atrophic changes in the reproductive organs appear. The woman usually remains in good health for many years thereafter and at first sight one might suspect that any need for substitution therapy would no longer arise. Such, however, is not always the case. I need only mention the usefulness of vaginal suppositories containing estrogen in the treatment of atrophic vaginitis and postmenopausal dyspareunia to emphasize that there may be entirely legitimate indications for the use of estrogens long after ovarian activity has normally ceased.

Finally, we come to a brief discussion regarding the possible use of the sex steroids in the rejuvenation of the aged or aging person. This may seem an impossibility but clinicians have long known that granulosa cell and theca cell tumors of the ovary will produce rejuvenation of the reproductive organs. These tumors produce sex hormones and these in turn reverse the atrophic processes which have set in. We also know from work done by Dr. William H. Masters in my department that the reproductive organs of aged women can be completely rejuvenated by the systematic use of estrogen and progesterone. Actually, endometria have been produced in women of 80 years that are histologically identical with endometria normally found only during the reproductive years. Full progestational development has been achieved and regular, but artificially induced, menstrual periods have been produced in several women in their "seventies" for as long as four years. The vascular changes which occur in these uteri are equally amazing. We now have been able to examine uteri of patients who have died while under study and have seen arteriosclerotic vessels that have been

recanalized and have become functional again, solely as a result of long treatment with the female sex hormones. These studies do not prove anything regarding the ageing process other than to point out that in a certain part of the body, namely, the reproductive organs—excluding the ovary, the senile changes occur specifically because of absence of the female sex hormones and that this aging process is reversible. You may ask whether this is desirable or not and I can only say that the patients under treatment seem physically and mentally more active than prior to treatment.

A discussion of use of the other hormones in the ageing person remains for the future but the future looks promising. The present enthusiasm for cortisone is quite justifiable. The availability of the hormone has already produced a whole new approach to many biological problems. The discovery is no more important, however, than previous discoveries relating to the internal secretion produced by the thyroid, gonads, pancreas and pituitary. The rounding out of our knowledge regarding the actual chemical compounds produced by each of the endocrine glands does, however, open new avenues to the study of the ageing processes. May it not be that man ages, not because his arteries have rusted out, but because his chemical regulators have let him down. At any rate most of the hormones are now available so that it is possible to test in the aging person the affects of hormones other than the sex steroids in the aged.

A REVIEW OF 50 OPERATED CASES OF PROTRUDED OR RUPTURED INTERVERTEBRAL DISCS IN THE LUMBAR AREAS*

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These 50 cases have been reviewed in order to ascertain our results following surgical therapy and to compare them with similar studies in civilian practice and in other Veterans Administration Hospitals.^{1, 2, 3, 4, 5}

The cases in this study were all Veterans Administration patients and were taken consecutively, except in three or four instances where a follow-up would be impossible; then, the cases taken to complete the series were subsequent to the original 50 patients.

All of our material has been seen both by the neurosurgeon and the orthopedist. Only in a few instances conservative treatment was attempted

as we feel that once a diagnosis of protruded or ruptured intervertebral disc is made, both clinically and radiographically with the aid of a pantopaque myelogram, surgery is indicated as the most rapid method of relief of pain, of returning the patient to his usual employment and of preventing further recurrences. These patients were all males and their ages ranged from 21 to 59, with an average age of 35. The occupation of these patients, at the time of admission, was varied from light work to heavy manual labor, a majority being farmers and heavy laborers. Seventeen (34 per cent) of the patients claimed that their first symptoms began while in the Federal Armed Services. Some authors believe that trauma plays an important part in the production of rupture or protrusion of intervertebral discs.^{2, 6, 7} Thirty-one (62 per cent) of them presented a history of previous injury to the back, while nineteen (38 per cent) were unable to state exactly when or how their first symptoms appeared. In the majority of patients with a history of trauma, the onset of symptoms was sudden and could not definitely be connected with a single instance. Nine had their service connection established, 30 had filed and were denied and 11 made no claim whatsoever to service connected disability.

The most common complaint was pain. Forty-six patients complained of pain in the lower back and in the lower extremity on the affected side. The right lower extremity was involved in 25 patients, the left lower extremity in 20 and both extremities in one. None of the patients complained of pain in the back unassociated with pain in the extremities. Four complained of pain in the hips and lower extremities only. Coughing, sneezing or straining caused radiation of pain into the lower extremities in 43 patients, and numbness of the foot or leg was described by 23 patients.

The following physical findings were present: . . . eight patients had a list to the side of the lesion and 15 had a list to the opposite side. There was a loss of the normal lumbar curve in 22 and reversal of the lumbar curve in five cases. Straight leg raising on the affected side was considered to be limited in 43 cases, and discs were found at operation in 40 of these cases. In three patients where no disc protrusion was demonstrable, straight leg raising was limited. In five of the proven disc protrusions, straight leg raising was not limited to any appreciable degree on either side. Localized tenderness upon deep pressure on the affected side, lateral to the spinous process, was found in 40 patients; and four patients had localized tenderness without a disc being found at operation. This, in our opinion, is a valuable sign but must be evaluated in relation to the patient's sensitivity to pain. Loss or diminution of the ankle jerk on the affected side was found in 36 of the 44 cases of proven protrusion between L-5 and the sacrum. Two cases had slight changes in the ankle jerk in which no disc was found. In

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one case having protruded discs between L-4 and L-5 and L-5 and S-1, the knee and ankle jerk were markedly decreased on the affected side.

We have not been able to find the clearly demonstrated sensory patterns described by Keegan,⁸ but have found in the 45 cases in which a disc was present that 23 had no objective sensory changes and 18 had hypesthesia and hypalgesia over the lateral aspect of the foot of the affected side. One patient, who had a proven disc between L-5 and S-1, had sensory changes over the dorsum of the foot. Three had sensory changes over the lateral aspect of the leg of the affected side. Of these protruded discs, two were located between L-5 and S-1 and one between L-4 and L-5. In two instances of proven discs between L-4 and L-5, the sensory disturbances consisted of diminished sensation over the lateral aspect of the foot of the involved side. In the five cases wherein no disc was found, three had sensory changes and two no sensory changes. Weakness of extension of the great toe on the involved side as compared with the uninvolved side was found objectively in 20 cases. The ability of the patients to walk on the heels and toes has been considered by us as a rapid and fairly reliable method of demonstrating the possibility of the presence of a disc. Of the 45 discs demonstrated at surgery, 27 (60 per cent) were unable to walk upon their heels without extreme distress.

Anteroposterior and lateral roentgenograms were routinely taken of the lower back. These revealed a narrowing of the interspace between L-5 and S-1 in 13 cases and between L-4 and L-5 in only one instance. In general, our results agree with Arbuckle, Sheldon and Pudenz⁹ who state that plain roentgenograms are of little value without myelography in the diagnosis of ruptured intervertebral discs.

Pantopaque myelography was carried out on all patients before surgery was undertaken, because we feel that it is a definite aid and adjunct in locating the exact region of the protruded disc and in many instances may save the patient the discomfort of being submitted to surgery. It should be stated at this point that during the period that these 50 cases were seen and operated, many more than 50 pantopaque myelograms were carried out, but we did not, on the other hand, do myelograms on all patients who complained of pain in the back or lower extremities unless the history and physical findings suggested the possibility of such a lesion being present. We have reviewed the myelographic films and would again consider two films as essentially normal in which cases discs were removed and the patients were completely relieved of their pain. However, the symptomatology and physical findings were in both instances definitely diagnostic. In five instances wherein the myelographic films were considered positive, no disc could be demonstrated. This represents a 14 per cent error in diagnosis by pantopaque, which

is within the average range reported by other authors. Barr¹⁰ reports pantopaque examinations to be 90 per cent accurate, while Raaf and Berglund³ report 76.7 accuracy. While myelography is done routinely, it is admittedly not diagnostically infallible but does give one some assurance as to a lesion existence, and its location in most instances, and thus keep the exploration of extra disc spaces at a minimum. It has been our practice to carefully observe the flow of opaque material under the fluoroscope and if a deformity is seen, a spot film is taken, which is followed by films with the patient in the right and left oblique positions. In eight cases, the oblique film was either determinative or helpful in forming the final opinion.

Other laboratory procedures were found to be of little aid, either in arriving at an accurate diagnosis or determining which case would receive benefit from an operation. The spinal fluid cell count was within normal limits in all instances. The total protein of the spinal fluid in all operated cases varied from 31.5 mgs. per cent to 123.5 mgs. per cent. In the five cases in which no disc was found at operation the spinal fluid protein varied from 61.5 mgs. per cent to 77 mgs. per cent. No definite relationship between the severity of symptoms, pathological findings or postoperative results and the spinal fluid protein could be determined. In no instance was a tumor of the cauda equina found, although in eight cases a spinal fluid protein of 100 mgs. per cent or over was found. This is not in agreement with the findings of Love¹¹ who stated that all spinal fluid with a protein of over 40 mgs. per cent was compatible with the presence of a disc, and values of over 100 mgs. per cent were suggestive of the presence of a tumor.

The operative technic used was the more or less standardized interlaminar approach wherein the muscles are separated subperiosteally after incision of the dorsal interspinous ligament. A unilateral self retaining retractor was then used to hold the muscles laterally. The interspace was then identified and the ligamentum flavum removed by sharp dissection, thus exposing the epidural fat, which is retracted to allow one to adequately view the root and region of the intervertebral disc. We have not been reluctant to remove bone to more adequately visualize the root in its relation to the epidural space. It was necessary to incise the anterior longitudinal ligament in 33 cases so protruded discs could be removed, and in 12 cases the disc material was found to be lying free in the epidural space. We seldom, if ever, curetted the intervertebral space, but carefully explored it with a Takahashi nasal punch forceps, in order to remove any loose fragments that might be present. Closure of the wound was carried out by coaptation of the dorsal interspinous ligament with 3.0 silk, following which the subcutaneous tissues and the skin were closed separately by similar suture

material. One case showed evidence of wound infection and required drainage and removal of some of the silk sutures so as to bring about satisfactory healing.

Two patients had multiple operations, one case being explored three times and the other case twice. It should be stated that these patients ultimately received satisfactory results. We believe that failure to find the disc initially, in both instances, was due either to the fact that the disc had receded at the time of operation, or inadequate exposure was obtained so as to properly view the course of the root in its entirety.

Questionnaires were sent to the 50 patients some time after their discharge from the hospital. The average time from the date of their operation to the returning of the questionnaire was ten months; the longest period being 24 months and the shortest period being six months. The following is a replica of the questionnaire submitted to the patients:

Dear Sir:

You were operated upon at the Veterans Administration Hospital, Des Moines, Iowa, for a herniated disc. We are sending you this mimeographed letter hoping that you will answer the questions so as to aid us in better serving others with similar difficulty.

Please put an "X" opposite each one of the following statements:

1. I feel that the operation has cured me. Yes.. No..
I feel better since the operation. Yes.. No..
I am about the same as before
the operation Yes.. No..
I am worse than before the operation Yes.. No..
2. I was relieved of all pain when I
left the hospital Yes.. No..
I was relieved of pain in my leg Yes.. No..
I was relieved of pain in my back.. Yes.. No..
3. If you still have pain, where is it and is it as severe as before the operation? Answer:
4. Are you working? Yes.. No..
What kind of work are you doing?
Answer:
Are you doing the same work as
before the operation? Yes.. No..
What work did you do before your coming to the
Veterans Hospital? Answer:
Does working make you have pain
in the back or legs? Yes.. No
5. If you are not well, are you in
any way relieved? Yes.. No..
6. If you are not well, are you in any way worse
than before the operation? Please tell in what way.
Answer:
7. If you are in any way better, tell how you are
improved. Answer:
8. Are you sorry you had the operation or are you
glad you had the operation?
Answer:

Your cooperation in completing this form and returning it to this hospital as soon as possible will be greatly appreciated.

We have in general, followed the questionnaire as prepared by Shinnors and Hamby⁴ with modi-

fications which we felt made the form more adaptable to the type of case we had under observation. We realize that some of the questions and answers are confusing and somewhat difficult to evaluate, but we do feel that this questionnaire gives the patient some latitude in expressing his reaction to the procedure we have carried out and allows us to have a better profile of the patients response.

Of the 45 cases in which a protrusion could be demonstrated at surgery, 26 cases were entirely relieved of all back and leg pain, one case was relieved of back pain alone and 35 cases were relieved of pain in the lower extremity on the affected side. Of the five cases showing no protrusion of a disc, two were relieved of lower extremity pain and one was relieved of both back and lower extremity pain.

Four patients showing protrusion of the disc at operation were unrelieved and one other stated he was worse because he had pain down the leg on the opposite side. However, the pain on the original side had been completely relieved. We feel that this may represent a recurrence on the opposite side that will require evaluation at a later date.

On the basis of the replies received from the questionnaire, 44 were pleased that they had been operated, 22 were entirely relieved, 22 were relieved in part and six were unrelieved or worse.

Of the 27 cases claiming service connection on a historical basis and in which a disc was demonstrated at operation, 24 had relief and three had no relief. Of 18 cases with proven discs and not claiming service connection, 16 had relief and two had no relief. These findings tend to disprove our original ideas that our results would be much poorer among the service-connected group because of the possible reduction of their compensation at a later date. This is in agreement with the findings of Parrella and Zovickian² who made a similar study of the veteran patient. However, Spurling and Grantham⁵, Raaf and Berglund³ and Shinnors and Hamby⁴ state that they found a disproportionately high number of less than satisfactory results in compensation patients.

SUMMARY

1. In this series of 50 patients operated for ruptured intervertebral discs, 44 (88 per cent) were definitely improved, 22 (44 per cent) were entirely relieved and 22 (44 per cent) were partially relieved.

2. Thirty-eight (76 per cent) of the patients have returned to their full former occupations and seven more to part time employment. We believe this demonstrates the value of surgical therapy in allowing the patients to return to their former occupations in a shorter period of time; and while our follow-up period is short, to date there has been only one possible recurrence.

3. Pantopaque myelography was 86 per cent accurate and is felt to be essential in the preparation of every suspected disc rupture or protrusion.

4. Service connection of the disability did not influence appreciably the operative results in this series.

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STERILIZATIONS APPROVED BY IOWA'S STATE BOARD OF EUGENICS 1949

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There is no legal obstruction to sexual sterilization in any state. In 27 states laws have been passed to provide for surgical protection from parenthood, at government expense, of those with certain hereditary diseases. Under the eugenic sterilization law in effect in Iowa¹ patients considered in need of the operation may be reported by the heads of state institutions for the mentally diseased and deficient and of the Women's Reformatory.

If the Board considers the evidence to show the handicap to be present and procreation to be undesirable, it may order sterilization performed. The costs are then provided by a state appropriation. In practice the working of the statute is voluntary, since customarily no case is considered until a petition and consent signed by the patient or his or her family is on file.

The operation of the law is not limited to those in institutions, and petitions from Iowans outside their walls are received and considered. In most cases assistance in the preparation and submission of the necessary documents is given by a social worker. To simplify the procedure, the Eugenics Board has combined these on a single sheet which bears the request for the sterilization, the consent for the operation, if approved and the acceptance of the surgeon recommended by the Board.

Before 1949 the sterilizations carried out under the eugenic law numbered 891. Of these, 485 had been for insanity, 356 for mental deficiency and

50 for epilepsy. The males numbered 274 and the females 617.²

The benefits of the law to the community may be estimated in part from a consideration of the costs which would be involved in segregation, the alternative form of protection from parenthood. It would have involved more than 6,000 inmate years to have kept those setrized in institutions until 1950. At the conservatively estimated cost of \$300 per year, this would have taken \$1,800,000 from Iowa's taxpayers.

To the patients the benefits are even more important. They were protected from the psychic and economic overload of parenthood and were enabled to enjoy those 6,000 years of freedom which might not otherwise have been allowable. Fully satisfactory marriage may be substituted for the sexless life of institutions.

Most important of all are the advantages to the potential children. Many may inherit the handicap. A review of the accessible children of the feeble-minded sterilized in New Hampshire³ showed that 36 per cent were mentally deficient and an additional 38 per cent retarded. Development of the same disease in children of the psychotic is less frequent, but the risk is much above that for the average population. Even if hereditarily normal, no child can be satisfactorily brought up by an insane or feeble-minded parent.

To determine the characteristics of the average patient for whom protection is currently being furnished under the eugenic law, those approved by the State Board of Eugenics in 1949 have been reviewed. Of the total, 62, or 38 per cent, were male. The average age of the males was 27.6 of the females 25.7 and of all cases 26.6. The

Table 1
Number of Children per Patient* of those
Approved for Sterilization in 1949 by the
Iowa State Board of Eugenics.

No. of Patients	Male	Female	Both Sexes
130 Institutional	0.47	0.8	0.66
27 Non-Institutional	0.75	2.26	2.04
157 All Cases	0.49	1.14	0.90
74 Psychotic	0.68	1.16	0.96
75 Mentally Deficient	0.17	1.17	0.87
6 Psychotic and Mentally Deficient	1.33	0.33	0.83
57 Patients having at least one child	2.42	2.49	2.47
24 Unmarried women	—	0.5	—
17 Unmarried mothers	—	1.1	—

* 7 patients of whom the number of children was unknown have been omitted.
Average age of patient — 26

patients ranged from a girl of 12 to a man of 67 years of age. Of the males, 16 (26 per cent) had married, one of them three times. One was divorced. Of the females, 42 (41 per cent) had married and 10 had been divorced.

Psychosis provided the major reason for 76, or 46 per cent, of the sterilizations approved and mental deficiency for 72, or 44 per cent. Nine, or five per cent, had both mental disease and deficiency. Epilepsy was present in one case of psychosis and five cases of mental deficiency and was

the chief cause for two of the approvals. The major diagnoses and the numbers of approvals based on each were: psychosis 13, paresis 2, schizophrenia 54, manic depressive psychosis 5, cerebral arteriosclerosis 1, psychosis with mental deficiency 9, psychosis with epilepsy 1, mental deficiency 72, mental deficiency with epilepsy 5 and epilepsy 2.

As is to be expected, the majority of the petitions originated in the state institutions. That this section of preventive medicine is becoming known to social workers, however, is shown by the 27 non-institutional cases, 16 per cent of the whole.

That potential children need consideration is shown by a review of the 157 patients of whom the number of children was recorded. There were 141 children reported. The average age of the 70 children of which it was known was 5.8 years. Of the 59 men 12, or 20 per cent, reported 29 children. Of the women 45 (46 per cent) had borne 112 children. No illegitimate children of the men were recorded, but of the 112 children of the women, 12 had been born to 11 unmarried mothers. The numbers of patients reporting families of 1 to 7 children were 21, 10, 13, 8, 2, 2 and 1, respectively. The average number of children per patient among the psychotic, the mentally deficient and those afflicted with both handicaps was 0.96, 0.87 and 0.83. These numbers are probably higher than the

average for all institutionalized patients, since demonstrated fertility, especially if illegitimate, is apt to increase the probability of recommendation and approval of the sterilization. It should be

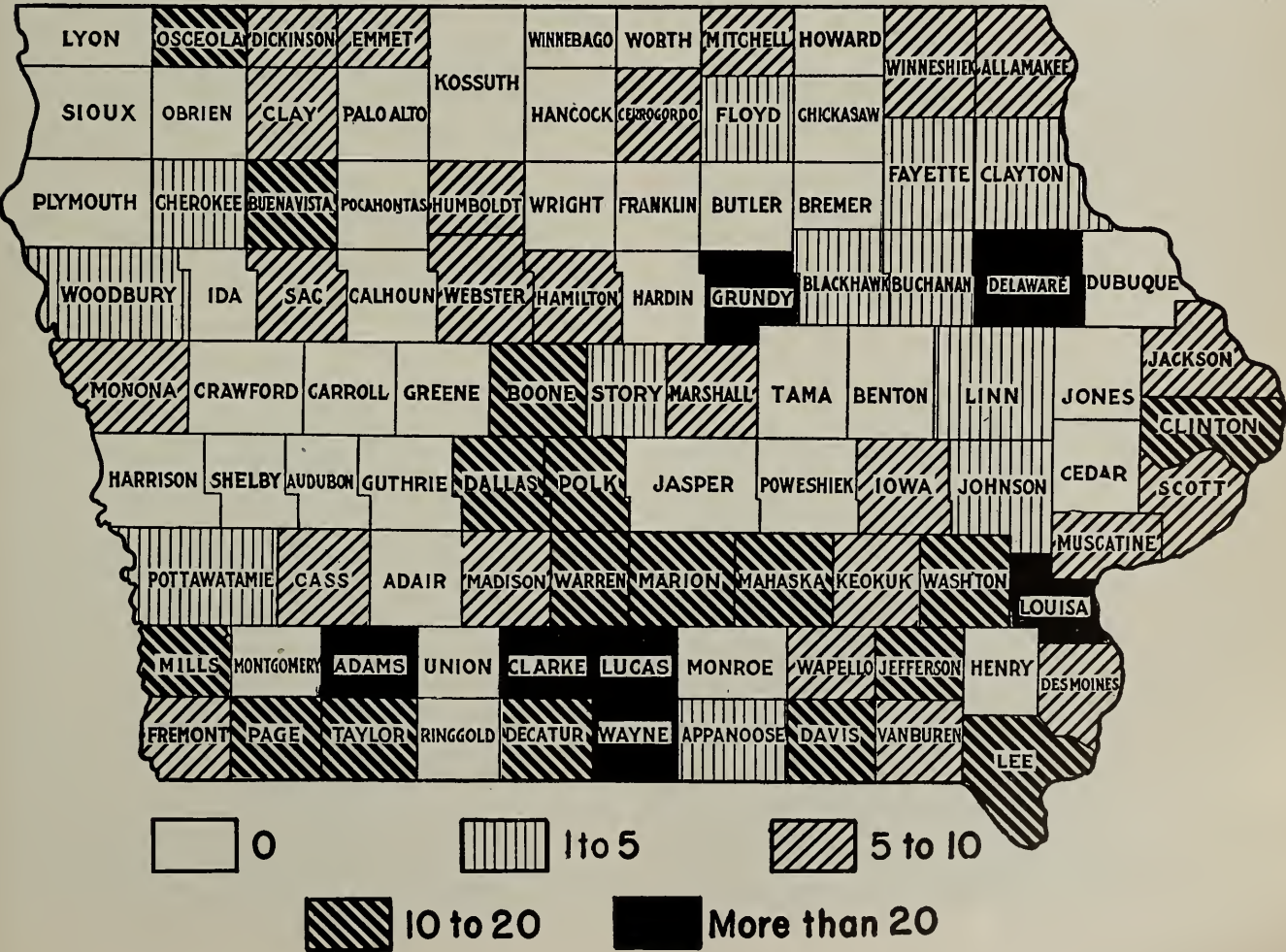
TABLE 2
Patients Approved for Sterilization in 1949 by the
Iowa State Board of Eugenics

Institution	Number	Percent of 1949 Discharges
State Hospitals for Mental Disease		
Cherokee	11	8
Clarinda	43	1
Independence	5	9
Mt. Pleasant	30	2
State Schools		
Glenwood	24	30
Woodward	24	30
All Institutions	137	
Non-Institutional Cases	27	
	164	

remembered, however, that the average age was 26 and that, if not sterilized, many fertile years lay ahead.

The number of sterilizations approved in 1949 on the recommendation of each of the state institutions is shown in Table 2. The proportion of those discharged at each institution who had been

STERILIZATIONS APPROVED BY THE IOWA STATE BOARD OF EUGENICS IN 1949, PER 100,000 POPULATION



sterilized was approximated by assuming that the 1949 discharges were one-half of those in the fiscal biennium July 1, 1948 to June 30, 1950. Those sterilized varied from one per cent at Clarinda State Hospital to nine per cent at Independence State Hospital. At the State schools the proportion was 30 per cent at both Glenwood and Woodward.

It is interesting to consider how many of the 141 unfortunate children could have been prevented. In many cases of psychosis children have been born before it is possible to make the diagnosis, and these in consequence cannot benefit from even an intensified sterilization program. With careful screening, however, mental deficiency can be detected before the reproductive years. The tragedies of the 70 children whose parents had this diagnosis could, therefore, have been prevented. That these unfortunate children were born is not a criticism of the institutions or the social workers. It is rather the result of the present public ignorance of the hereditary importance of mental deficiency and of the simplicity of sterilization.

The distribution of the 164 cases in the state when compared with the population of the counties is shown by the map. Protection was not approved during 1949 for any citizen of 39 of the counties. The highest rate was in Clarke County with 98 per 100,000 population, followed by Louisa County with 36, Wayne and Adams with 30 and Lucas with 27 per 100,000 population. The average for the State was 6.4 per 100,000.

Local understanding of the need of protecting the next generation is, perhaps, best shown by the rate of sterilizations of those outside of institutions, usually initiated by social workers. In this group, 23 counties are represented: Allamakee, Appanoose, Cherokee, Clayton, Clinton, Decatur, Delaware, Jackson, Johnson, Lee, Louisa, Lucas, Marion (2), Mitchell, Muscatine, Osceola, Polk (3), Sac, Scott (2), Warren, Washington, Wayne and Webster.

To estimate the adequacy of the sterilization program, the institutional cases protected because of psychosis may be compared with the number of first discharges. The latter can be estimated from the excess of first admissions over institutional deaths, which, according to the most recent report of the State Board of Control, were 410 per year. This is about five times the 86 institutional cases of psychosis approved by the Board of Eugenics in 1949. Obviously, only a portion of the first discharges are appropriate for sterilization. Whether this proportion exceeds that for which approval was given is worth careful consideration.

A conservative estimate of the mentally deficient as one per cent of the population and an assumed average life span of 50 years indicates that there are 528 new feeble-minded in Iowa each year. This is six times the 85 cases approved by the Board in 1949.

The limited use of preventive sterilization is due chiefly to the mistaken belief of the public that sexual sacrifice is involved. If physicians who understand that no physical or mental changes follow will inform the laity of this fact, greater protection will be given to the next generation.

SUMMARY

In 1949 Iowa's State Board of Eugenics approved the sterilization of 164 persons. Of these, 76 were psychotic, 72 mentally deficient, nine both psychotic and mentally deficient and two epileptic. Twenty-seven of these were non-institutional cases, initiated by social workers.

Prior to sterilization the men had had on the average 0.5 and the women 1.1 children each. Eleven per cent of those of the women were illegitimate.

The highest sterilization rates were in Clarke, Louisa, Adams and Lucas counties.

The sterilizations approved are approximately one in five of the first discharges with psychosis from Iowa's state institutions and one in six of the estimated annual number of 528 new feeble-minded in the State.

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INTERSTITIAL MYOCARDITIS IN INFANCY, REPORT OF A CASE*

JOHN S. DOWNING, M. D.
CEDAR RAPIDS

Acute interstitial myocarditis, a rare form of heart disease, was first described by Fiedler¹ in 1899. This disease is known by a variety of names, such as Fiedler's myocarditis, acute isolated myocarditis, idiopathic myocarditis, productive myocarditis and eosinophilic myocarditis. Scott and Saphir² reported two cases in the American literature in 1929.

The clinical picture is one of progressive myocardial failure unassociated with the usual causes of myocardial damage, as rheumatic myocarditis, diphtheritic myocarditis or pyogenic myocarditis.

The etiology of interstitial myocarditis is still obscure, but a great number of agents are under suspicion, as:

1. Infection

A. Bacterial—Finland, Parker, Barnes and Jolliffe³ reported two cases of influenza A pneumonia associated with a nonbacterial type of myocarditis.

B. Viral—Helwig and Schmidt⁴ have described a filter passing agent producing myo-

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carditis in anthropoid apes and small animals.

- C. Syphilis—Taussig and Oppenheimer⁵ described a six year old child who developed a syphilitic infection following the intramuscular injection of whole blood. The patient suddenly died two months later of cardiac failure and the autopsy revealed an extensive, diffuse myocarditis composed of round-cell infiltration. The clinical events and pathological findings were consistent with syphilitic infection, but the exact etiological agent could not be proven.

2. Toxins

Toxic agents are suspected from diphtheritic and streptococcic infections. Mallory and Keefer⁶ have found cellular infiltrates in the myocardium in hemolytic streptococci infections.

3. Vitamin B₁ Deficiency States—Toreson⁷ in 1944 considered Vitamin B₁ deficiency to be a possible cause.

4. Allergic Reactions

A. Sulfonamides—French and Weller⁸ reported a case of myocardial inflammation secondary to sulfonamide administration.

B. Other drugs are suspected as bismuth, arsenics, sulfur and alcohol.

5. Miscellaneous

Pregnancy, burns, hypothyroidism and status thymolymphaticus are considered possibilities.

It is therefore obvious that the causative agent is unknown at the present time.

The pathological changes in the body are located in the heart and usually confined to the myocardium. The heart is enlarged and dilated. Mural thrombi with the development of emboli may result from extension of the process to the endocardium. Robinson and Queen⁹ reported a case in which the first signs of the disease were emboli to the left brachial and right popliteal arteries. The myocardium is for the most part pale grey

in color. The histologic findings in the myocardium are not specific but usually there are large numbers of lymphocytes and large mononuclear cells with varying degrees of polymorphonuclear leukocytes, plasma cells and eosinophiles. Muscle degeneration may be apparent if the patient lives long enough, as fibrous tissue will replace the muscle tissue.

The onset and course of the disease is usually one of rapid and progressive myocardial failure. The duration of the disease is, as a rule, measured in terms of days to weeks. Death may occur at any moment. Occasionally the duration of illness may extend from months to years of severe congestive heart failure, but this is rare. The outstanding signs and symptoms are pallor, cyanosis, restlessness, irritability (precordial pain?), dyspnea, tachycardia and a rapidly enlarging heart. Bailey and Anderson¹⁰ reported a case in which precordial pain was so severe that the diagnosis of coronary thrombosis was suspected. Fever is usually absent. The temperature remains normal unless some complication is present, as terminal pneumonia. A systolic murmur may be heard at the cardiac apex, but as a rule no murmurs are heard over the precordium. The terminal stage of the disease is that of cardiac failure with rales in the lung fields; edema, cyanosis, dyspnea, tachycardia and an enlarged liver.

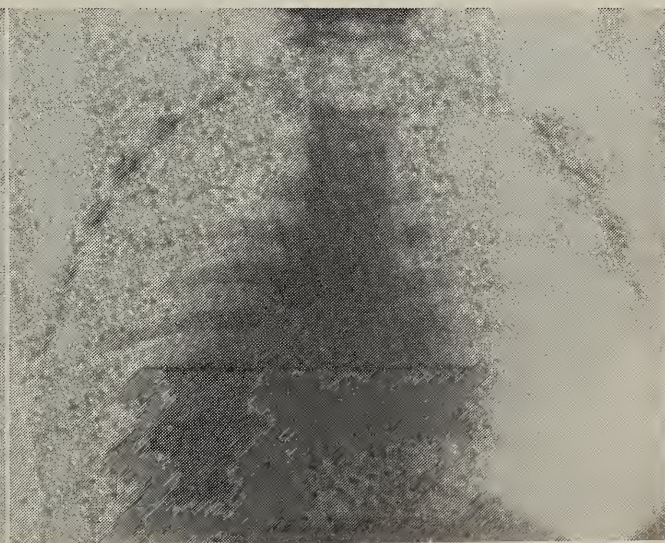
This case is reported because of the rarity of this syndrome and the difficulties in diagnosis encountered prior to necropsy.

History: D. J., a ten month old white boy was admitted to Mercy Hospital September 9, 1950. The family history was negative. No history of syphilis, tuberculosis or allergies could be found. Father and mother were alive and well and one sibling was in good health. Birth and developmental history were normal.

The child previously had been admitted to Mercy Hospital June 19, 1950 with a diagnosis of acute follicular tonsillitis. The treatment, which



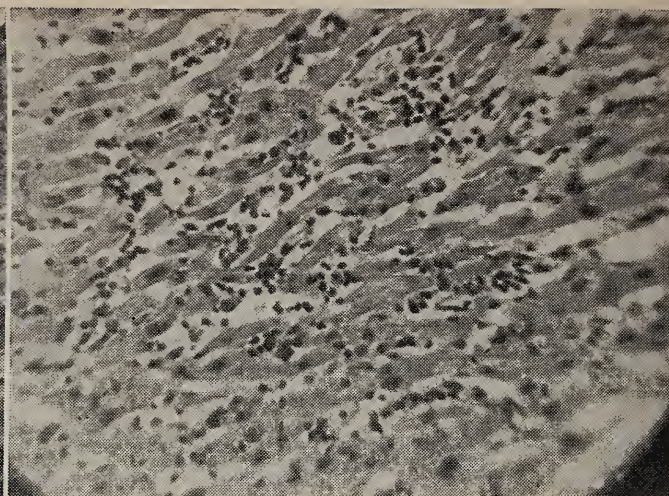
X-ray of chest, June 20, 1950



X-ray of chest, September 10, 1950



Low Power Myocardium



High Power Myocardium

was given by another local physician, consisted of penicillin and aureomycin. He was discharged as well after seven days of hospital treatment. Fortunately an X-ray of the chest was taken because of a persistent cough. This report read as follows: "Chest films show no pneumonia. The heart is normal in size and shape and there is no enlargement of the thymus."

Present illness: The patient was apparently well until four days prior to hospital admission. The mother first noticed that the child began to regurgitate some of his feedings. This gradually increased in incidence and volume and became projectile in character. Restlessness and irritability were present, but no fever. Correspondingly, the mother noticed that he looked pale in color which increased in severity until the day of admission when he was described as being snow white. This prompted the parents to bring the child to the emergency room at Mercy Hospital.

Physical examination: Examination showed a well developed, well nourished, extremely pale and irritable, white male infant. The temperature was 99.4° (rectal) pulse 120; respiration 60. The upper respiratory tract and ear drums were normal. The anterior fontanel was not bulging. Diaphragmatic breathing was present accompanied by grunting expiration. The breath sounds were normal. No heart murmurs were heard, but the heart sounds were distant. The liver and spleen were not palpable. The abdominal, cremasteric and patellar reflexes were normal. Kernig's and Babinski's signs were absent.

Laboratory: The red blood cell count was 3,970,000 and the hemoglobin 9.3 gm. per 100 cc. of blood. The erythrocytes appeared hypochronic and microcytic. The color index was 0.78. The white blood count was 13,350 with the differential count showing 56 per cent polymorphonuclear leukocytes and 40 per cent lymphocytes. No eosinophils were present. The blood sedimentation rate was 20 mm. in one hour. The blood Wasserman was negative. The urine was clear yellow,

acid in reaction with a trace of albumen present and positive for acetone.

Roentgen examination: September 10, 1950. Short distance films of the chest shows the heart to be enlarged as compared to films on June 20, 1950. The contour of the heart is not unusual. The domes of the diaphragm are smooth and the costophrenic angles are clear. Impression—congenital heart disease.

Course in the hospital: The patient lived approximately two days in the hospital. The pulse and respiration remained rapid throughout the terminal illness. The pulse rate was lowest on admission being 120 per minute. The respiratory rate varied between 56 and 100 per minute. The child was fever free on admission, 101° (rectal) after 24 hours and was 102° (rectal) shortly before death. An electrocardiogram was not obtained. The treatment was symptomatic using continuous oxygen, sedation by hypodermic, Coca-Cola by mouth, fluids by proctoclysis and penicillin by hypodermic as a bacteriostatic agent. The patient gradually became cyanotic and suddenly died on September 11, 1950.

My impression was acute cardiac failure, cause undetermined. Congenital heart disease was at first entertained, but due to the lack of cardiac murmurs and a history of a previous admission with a negative chest plate, this impression seemed unlikely. Pericarditis with effusion was also suspected because of the distant heart sounds and signs of cardiac embarrassment, but X-ray of the chest failed to help in the diagnosis. Paroxysmal tachycardia could not be ruled out as an electrocardiogram was not taken.

This patient represents the true type of acute isolated myocarditis first described by Scott and Saphir² in 1929. The primary pathology is located in the myocardium while the integrity of the endocardium and pericardium is preserved. This however is the exception as Tedeschi and Stevenson¹¹ point out in their recent publication.

Necropsy report: Anatomical Diagnosis—Hy-

pertrophy and dilatation of the left heart (cause?) marked consolidation or atelectasis of the lungs; splenomegaly; hepatomegaly; bilateral pleural effusion; slight hyperplasia of Beyer's patches and the mesenteric lymph nodes.

The body was that of a pale but well developed and well nourished young male measuring 76 cm. long and weighing 9,600 grams. There were no external marks or scars. The head was covered by a thin growth of blond hair.

Weight of Organs:

	Patient	Normal
Heart	100	39
Left Lung	100	51
Right Lung	150	54
Liver	400	274
Spleen	50	22
Kidneys	60	63

Thorax: The diaphragm was at the level of the fifth rib on the right, and at the fifth interspace on the left. Both pleural cavities contained some blood-tinged fluid, about 100 cc. in the right and 50 cc. in the left. The thymus was normal in size and position and was soft and gray to white. The heart is considerably enlarged. The pericardial surface was smooth and glistening. The pericardial sac contained about 25 cc. of amber colored fluid. The coronary arteries were thin and patent. The myocardium of the left ventricle measured 1 cm. thick but was flabby and had a pale light red color, the paleness being especially noticeable on the endocardial surface. A few petechiae could be seen on the epicardial surface. The valves were all thin and appeared grossly unchanged. The aorta was in normal position and about normal size. The pulmonary artery contained only fluid blood. The ductus arteriosus was completely obliterated and was now represented by a thick fibrous cord. The foramen ovale was closed, even to a small probe. The trachea and bronchi contained a moderate amount of blood tinged mucous and serous fluid. The smaller bronchi and the ramifications of the pulmonary artery were grossly unchanged.

The lungs were both dark red, of firm rubbery consistency. When placed in water both lungs sank rapidly. On section the cut surface had a homogeneous red appearance and pressure could neither express air or exudate.

Abdomen: The liver was noticeably enlarged and the free margin extended 6 to 7 cm. below the costal margin. The surface of the liver was pale and reddish brown in color. On section the parenchyma was paler than usual, but about the normal consistency.

The spleen was slightly enlarged, very dark red to blue and on section the pulp was firm and very dark red. The Malpighian corpuscles were inconspicuous.

The adrenal glands were small and grossly unchanged.

The kidneys were normal in size and position

and on section were grossly unchanged. The pelvis, calyces and ureters were normal. The urinary bladder was small and contained about 20 cc. of clear urine.

The prostate was small and unchanged.

The abdominal aorta and vena cava were unchanged.

Microscopic:

Myocardium—Sections taken from the different portions of the myocardium revealed slight edema with separation of the muscle bundles. Scattered diffusely through the myocardium was an infiltrate by subacute and chronic inflammatory cells consisting mainly of lymphocytes, large mononuclear phagocytes, a few plasma cells and a few neutrophilic polys. Eosinophils were searched for but not found. There were small amounts of cellular infiltration in the interstitial tissues about the blood vessels but the major portion of the infiltrate was in the muscle. The muscle bundles had patchy areas where the fibers had been partially destroyed and replaced by very loose mesh fibrous tissue. This muscle cell degeneration and fibrosis was much more evident on special fibrous tissue stain (Masson's trichrome). The endocardial surface of the ventricles had a thin layer of fibrous tissue beneath the endocardium and the cellular infiltrate did not involve the inner portion of the myocardium or the endocardium. The pericardial surface was likewise not involved except for slight perivascular collections of lymphocytes.

Masson's trichrome stain revealed considerable fibrous replacement of the muscle bundles especially prominent in the areas of heavy cellular infiltration and there was a fine interstitial scarring through the myocardium.

Lung: Most of the alveoli were filled with edematous fluid and contained many large phagocytes. There was marked hyperemia of the wall of the alveoli.

Kidney: Unchanged.

Spleen: moderate passive congestion.

Small bowel: To include Peyer's patch-moderate lymphoid hyperplasia.

Lymph node from mesentery: Hyperemia and slight lymphoid hyperplasia.

Adrenal: Unchanged.

Prostate: Unchanged.

Conclusion:

Primary cause of death: Acute diffuse myocarditis (cause?).

Contributory cause of death: Marked passive congestion and edema of lungs.

SUMMARY

A case of isolated, interstitial myocarditis in infancy of the Fiedler's type is presented. The first signs of the disease were vomiting, marked pallor and restlessness. The course of the disease was one of progressive myocardial failure with irritability (precordial pain?), dyspnea, tachycardia and a rapidly enlarging heart. The clinical diagnosis was

not established until a necropsy was performed and the heart examined microscopically.

APPRECIATION

The author acknowledges deep appreciation to Dr. Regis Weland for his interpretation of the necropsy performed on this patient.

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State University of Iowa
College of Medicine

CLINICAL PATHOLOGIC CONFERENCE February 21, 1951

SUMMARY OF CLINICAL RECORD

This is the medical history of a 21 month old female child. The child's family history was non-contributory. The pregnancy, birth and neonatal period were normal. The child grew and developed in keeping with accepted standards. She had no illness prior to the first week in October, 1946.

The onset of her illness was marked by fever and an observed "sleepiness". A diagnosis of a pharyngitis was made. Three days later a right otitis media was recognized and a myringotomy was done. The next day a bilateral mastoidectomy was performed and abundant purulent material was found in the left antrum. Just prior to the operation a spinal tap was done. The spinal fluid was reported to contain unidentified organisms and to show pleocytosis. Following the surgical procedure therapy for the treatment of meningitis was started. This therapy was not specific because the organism was not identified. Sulfadiazine was given orally and penicillin was given both intramuscularly and intrathecally. No response to therapy occurred. The temperature remained elevated and pleocytosis continued.

On approximately November 10, the severity of the child's illness increased. Three days later a left

hemiparesis was noted and the child was transferred to this hospital.

Upon admission to this hospital the child had the general appearance of chronic illness. She was lethargic and irritable when aroused. The right-sided limbs were much more vigorous than the left. The latter showed minimal response to pin prick pain. All tendon reflexes were hyperactive. Nuchal rigidity was classified as +1 or +2. A diagnosis of hydrocephalus was made on the basis of Macewan's sign and the wide separation of the sagittal sutures. The fundoscopic examination revealed bilateral papilledema of approximately three diopters. The record of the spinal fluid examination showed the original spinal fluid pressure was 360 mm. of water, the white cell count 1,734 per cu. mm., predominately polymorphonuclear cells. The Pandy was plus two. The spinal fluid protein was 27 mg. per 100 cc. No organisms were identified on the spinal fluid smear. The hemogram showed the hemoglobin was 13 gm. per 100 ml.; the red blood cell count was 4,100,000 per cu. mm. and the white blood cell count was 27,500 per cu. mm.

The child was seen by the Neurology Department and they suggested a neurosurgical examination. It was the agreed opinion that intensive medical care should be continued.

The day after admission a positive culture for hemophilus influenza B in the spinal fluid was reported. Immediate intensive therapy for this infection was started. The therapy consisted of combined intravenous anti-serum, oral sulfadiazine, intramuscular and intrathecal penicillin. The anti-serum was repeated until a positive quellung reaction occurred. Convulsions of varying intensity occurred from November 14 to November 25. The left side of the body was most severely affected. The convulsions were controlled with difficulty by heavy barbiturate sedation. The child's head circumference was recorded to be 45 cm. on November 19; December 12, it had increased to 49 cm. The cells in the spinal fluid gradually decreased from the admission count to a normal count by December 2.

The patient remained apathetic during her hospital stay. She showed short-lived emotional response and was uninterested in her surroundings. It was necessary to feed the child by IV fluids and gavage feedings. During the week prior to her dismissal, she no longer had to be gaviged. She had had no fever for two weeks. It was thought that the infection was no longer active. It was planned that the local physician should follow the progress of the hydrocephalus by recording serial head measurements and any untoward neurological signs. The patient was dismissed on her 26th hospital day.

The patient was readmitted on January 29, 1947. The interval history showed the first three weeks at home were most encouraging. Her hemiparesis markedly improved, she ate well and "talked as much as she ever had." She could not hold her head well and the parents were doubtful as to how much she could see. A complete reversal of the

favorable progress occurred during the last three weeks at home. She had the onset of fever, irritability and loss of use of the left side of her body. She no longer recognized her parents. The head size had increased to 49.7 cm. During the 24 hour period prior to readmission, she assumed a position of severe opisthotonus.

At the time of readmission the child was critically ill. She had 4+ nuchal rigidity. General extremity stiffness was present and no movement of the left arm or leg was noted. The head had increased in size to 50 cm. The spinal tap revealed an original spinal fluid pressure of 190 mm. of water and 1,000 cells per cu. mm. The culture of the spinal fluid showed no growth. Therapy for a possible recurrence of her hemophilus influenza infection was restarted. The child did not respond to therapy and died on the ninth hospital day.

Abstracted by Dr. John C. McQueen.

CLINICAL DISCUSSION

Dr. John C. McQueen, Pediatrics: The case to be presented this morning is of considerable interest because it represents a relatively common medical problem that can be improved.

The patient discussed in the protocol had, as the first signs of illness, a mild pharyngitis and an otitis media. This combined infection is common among children. In a great majority of cases a minimal amount of medical care is adequate to control the infection. This is the first point to be emphasized. The illness had its origin during a common type of childhood infection. In addition to the usual symptoms present at the time of such infections, the parents stated that their child was "sleepy." This finding was of sufficient severity to justify the spinal puncture prior to the mastoidectomy. On the basis of the spinal fluid obtained, a diagnosis of a non-specific meningitis was made. This is the second point to be emphasized. The offending organism was obtained in the spinal fluid but was not identified.

Dr. Sahs talked with the referring physician at this time of the patient's admission and was told that there was considerable confusion as to the classification of the organism. It was "thought for a time to be a coccus and then a bacillus infection." This information is taken from the record to emphasize that the local physician had no access to bacteriological diagnosis. This is the third point to be emphasized. Because he had no specific bacteriological diagnosis, the local physician could give no specific therapy.

From the first week in October until November 13, non-specific treatment was continued. In spite of this treatment the disease progressed. At the time of her admission to this hospital the child was acutely ill and had severe residual damage from her disease. She had hydrocephalus as shown by the increased head size. She had an active meningitis as shown by the spinal fluid findings. It was not included in the protocol but might be added that she was examined by a member of the ENT

Department and there were no signs of upper respiratory tract disease. The organism was not identified on the smear made of the spinal fluid taken at the time of admission. However, the organism was identified in our laboratory on the basis of the spinal fluid culture. This is the fourth point to be emphasized.

Combined therapy was started using type specific antiserum, sulfadiazine and streptomycin, the best therapy we had at that time for such infections. The child's progress was not favorable. The head size

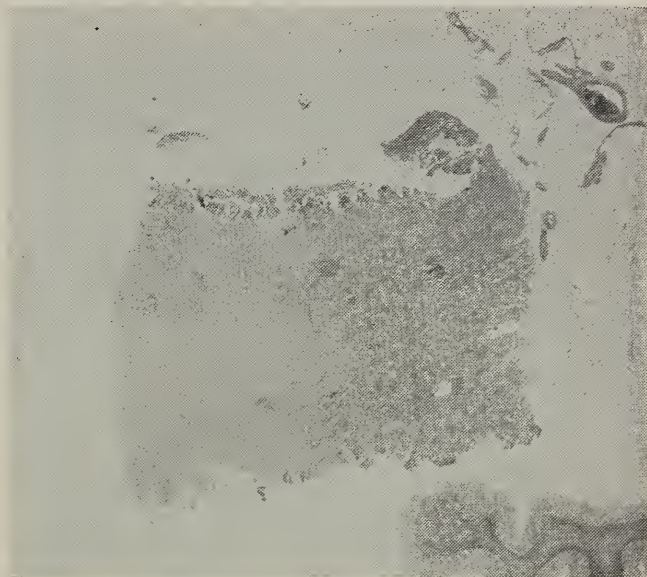


FIGURE 1. Dura Mater showing extreme thickening.

continued to increase. It was a considerable period of time before the temperature returned to normal and the spinal fluid cleared. At that time it was assumed that the infection was no longer active. It was decided that there was no indication for any surgical procedure and the patient was dismissed to the care of the referring physician. Head circumference measurements were to be taken at weekly intervals to determine the status of the child's obstructive process. This is a common procedure in cases where there is a possibility of a progressive hydrocephalus.

The first three weeks at home were satisfactory and some improvement occurred. Then the collapse came. The child did poorly and was readmitted to this hospital with signs suggesting reactivation of her disease and with some increase in head circumference. Therapy was restarted, but the child did not respond.

In general then we have the story of a child who had the onset of a disease at the time of a common illness in childhood. It was a bacterial infection which was not specifically identified, and therefore could not be specifically treated. The disease progressed and unfavorable results occurred.

At this time we would like to have the students' opinion.

Junior Student: The students all agreed, of course, on influenzal meningitis. Three of the group felt that a hyperplastic meningitic reaction was

sufficient to explain all of the symptoms. Nine felt a brain abscess complicated the picture. The majority felt this child had a hyperplastic meningitic reaction plus the brain abscess which we feel would explain all the symptoms and signs that the child had. The majority felt that depression of the vital centers was the cause of death and seven felt that it was septicemia.

Dr. Henry K. Hamilton, Medicine: Was the streptomycin given intrathecally?

Dr. McQueen: Streptomycin was given both intrathecally and intramuscularly. At the time the

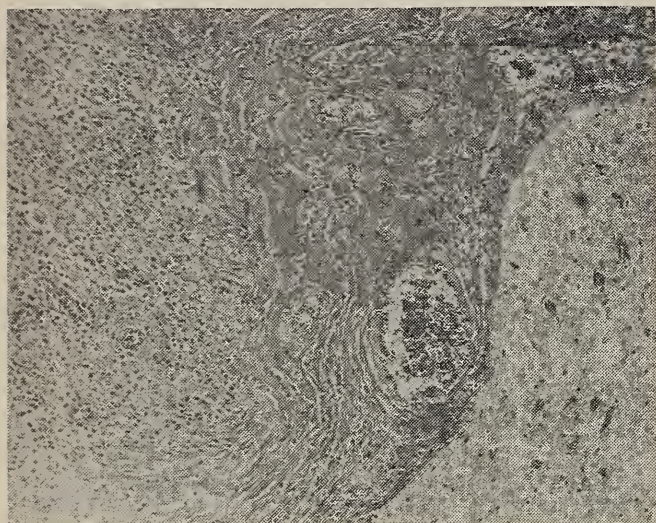


FIGURE 2. Inflammatory exudate in leptomeninges over cerebral cortex.

child was dismissed from the hospital, a diagnosis was made of "acute meningitis, hemophilus influenza type B, with hydrocephalus." Dr. Layton will discuss the pathological report.

NECROPSY FINDINGS

At autopsy the brain was hyperemic and edematous. The subarachnoid space contained copious amounts of cerebrospinal fluid. A thick plastic exudate was present over the brain, particularly about the base. The pachymeninges were adherent over the surface of the brain. On the right side, the dura mater was about 1 cm. thick. This dural leaf formed the external wall of a cavity which covered the right frontal, parietal and a portion of the temporal lobes. The total length of the cavity horizontally was 15 cm.; the superior-inferior length was 5 cm.; and the depth was approximately 2 cm. The internal wall of the cavity was formed by the greatly thickened and adherent leptomeninges. Ventriculitis and obstructive hydrocephalus were also present. *Hemophilus influenzae*, type B, was isolated as the causative organism. Associated with the overwhelming infection were cloudy swelling of liver and kidneys, hyperplasia of bone marrow and spleen and patchy interstitial pneumonitis in lower lobe of right lung. Bilateral, well-healed scars were present over the mastoid antra.

NECROSPY DIAGNOSIS

Subdural empyema (abscess), right cerebral hemisphere; chronic meningitis; and ventriculitis; due to *Hemophilus influenzae*, type B.

Hydrocephalus, obstructive type.

Interstitial bronchopneumonia, right lower lobe.

Mastoid antrotomy scars, bilateral, well-healed.

Dr. Jack M. Layton, Pathology: Figure 1 is a microtessar view of the dura and shows the extreme degree of thickening in this structure. Figure 2 shows cerebral tissue (on the left) with thickening of the leptomeninges. The inflammatory exudate was composed of matted fibrin, lymphocytes, plasma cells and lipoid-laden macrophages. Figure 3 shows the vascularity as well as the cellularity of the exudate. One may observe the great numbers of vascular spaces which are maximally engorged with erythrocytes out in this organizing exudate. Figure 4 is a high power photomicrograph of one of these areas. One can see the huge size of some of the mononuclear cells which contain lipide material. There are also lymphocytes and plasma cells in this exudate. Microscopically this is the picture of chronicity at this time.

Dr. McQueen: Recently it seemed desirable to review the cases of influenzal meningitis seen in this hospital. I will not tax you with the details of that ten year summary. I believe some of the facts that I found by summarizing the charts of those patients are pertinent to the discussion of this case. I have chosen to discuss as a typical group of patients the 18 patients with influenzal meningitis seen during the year 1948. During that year we were using combined streptomycin, sulfadiazine and type-specific antiserum therapy. It has been suggested that the mortality rate for this disease should be approximately seven per cent. In our own series, during the year 1948, the mortality was approximately 20 per cent.

It is well known that one of the factors that influences the course of the disease and the response to therapy is the duration of the disease prior to the onset of therapy. The survey of the 18 cases showed we were not seeing these children early enough in the course of their disease. We saw five of these patients during the first three days of their illness, nine during the first week, four during the second week, four during or after the third week of their illness.

By examining the charts, we tried to find out why there was the time lapse between the onset of the disease and the recognition of the diagnosis. One of the reasons lay in the difficulties of making the diagnosis of meningitis among the younger patients. It should be repeated that a child under six months of age, and sometimes under nine months of age, may have a fulminating meningitis with no marked rigidity. This cannot be over-emphasized. Meningitis may occur in the small child without the clinical finding of neck stiffness. I believe the following statement is justified, "The child who has fever of an undetermined cause, who is not doing

well, who has signs of lethargy or stupor should have a spinal puncture."

We compiled the bacteriological reports concerning the spinal fluid that were sent in with the patients at the time of admission and were surprised to find that in six of the 18 cases an organism had been isolated, but incorrectly identified. The effect of this on any effort to give specific therapy is obvious. In two cases a purulent meningitis was recognized, but no organism could be identified. In seven cases no special puncture was done. In three of the 18 cases a correct bacteriological diagnosis had been made prior to admission to this hospital.

That this is not a problem of physicians in the small town is shown by the fact that about one-half of these patients came from larger towns. It does seem that the bacteriological laboratory facilities available to many physicians could not identify *Hemophilus influenza* B. I would like Dr. McKee to discuss this problem.

Dr. Albert P. McKee, Bacteriology: I agree with Dr. McQueen, a problem does exist. Bacteriologists have diagnostic problems the same as any other workers in the field of medicine. These organisms (*H. influenzae*) can be rather difficult to diagnose.

This organism, *Hemophilus influenzae*, usually can be found in the spinal fluid as soon as one can recognize the symptoms in the patient or shortly thereafter. One may have to centrifuge the spinal fluid to find it. Finding tiny gram negative coccobacillary organisms with occasional filaments leads one to consider the proper category. To positively diagnose it and diagnose it quickly, however, one must use the Neufeld quellung technic. This is the application of type specific antiserum directly to the organism in the spinal fluid. These organisms behave like the pneumococcus; that is, the capsule appears to swell and one can diagnose the organism immediately because this test is extremely specific. One can apply specific antiserum directly to the spinal fluid itself using the precipitin technic. If there are sufficient number of organisms present to see and use the quellung test on, usually there is insufficient amount of soluble polysaccharide in the spinal fluid to enable one to do a satisfactory precipitin test. Usually it is best to find the organisms and apply the quellung. Occasionally one has to culture in order to demonstrate the organisms, as we did in this case. We had to culture over night in order to find enough so that we could type them. There is a reason for this. This organism, like the pneumococcus, autolyzes rapidly. It apparently has autolytic ferments in it that allow the organism to break apart rather quickly. In addition to that after the organism is about eight to nine hours old, it tends to lose its capsule so one must usually apply the Neufeld quellung test to the organisms that are quite young, preferably eight hours or under. If the inoculum that is placed in the medium is sufficiently small, then usually one can still locate these capsules even after 18 hours.

That was the method used in this particular case of typing the organisms.

Most of the human infections are type B. Occasionally a type A or type F will cause human infection. This organism has at least six types. In this country Margaret Pittmann established six different types and designated them by letters, A through F. Fortunately we have not run into as many types as with the pneumococcus. Britain has described two additional types. *H. influenza* is not particularly hard to grow on culture media, but on blood agar the medium that is most often relied on by the bacteriological laboratories, the organisms

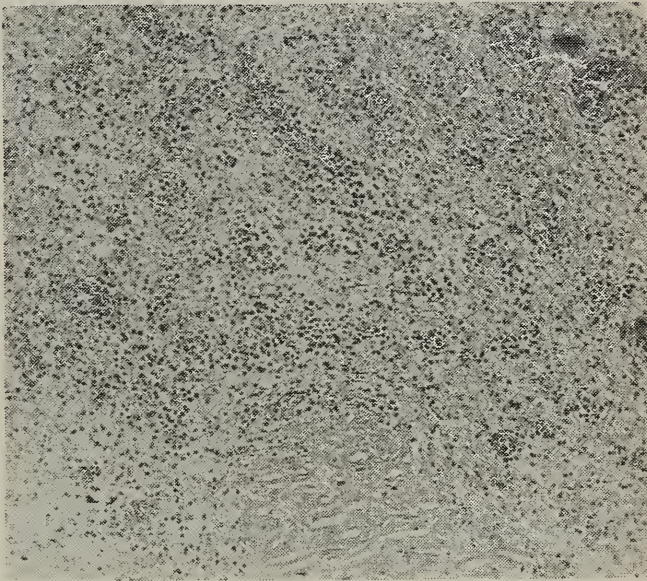


FIGURE 3. Inflammatory exudate in leptomeninges.

produce colonies in 24 hours that can barely be seen. One needs a hand lens to see that there is anything on the agar at all. We get around that by adding a little staphylococcus to the plate that will produce the important "V" factor. The organism is unusual in that it requires both the "X" and "V" factor. The "X" is an organic iron peroxydase, the "V" factor is the di-ortho-phosphopyridine nucleotide. Both factors are extremely important to the growth of the *Hemophilus* organism. There is usually enough of the "X" factor in the agar, but the organism grows poorly unless it has a little "V". The staphylococcus added to the plate will synthesize the "V" while it is growing along with the *Hemophilus* organisms and one obtains a positive satellite phenomenon. In a cross section of the agar, the colonies appear as follows: the staphylococcus would make a rather large colony, the *Hemophilus* close to the "V" staphylococcus produce a large colony, then the colonies diminish in size as they are farther and farther away from the staphylococcus colony.

An organism then in the spinal fluid that gives a positive satellite phenomenon is almost never anything but an *Hemophilus*. If one does not have the serum just at the proper time, this diagnosis is almost always reliable. Typing is important though to establish the type so the proper type serum can

be used. Since practically all the types are B, if type B antiserum is used, one would almost always be right. To determine whether or not an adequate amount of antiserum has been given, Alexander established the method of using the patient's serum to attempt to cause a positive quellung with isolated organism. Following the administration of the specific antiserum to the patients, serum is diluted 1 to 10 and applied to the *Hemophilus*. A positive test is considered an end point for adequate therapy.

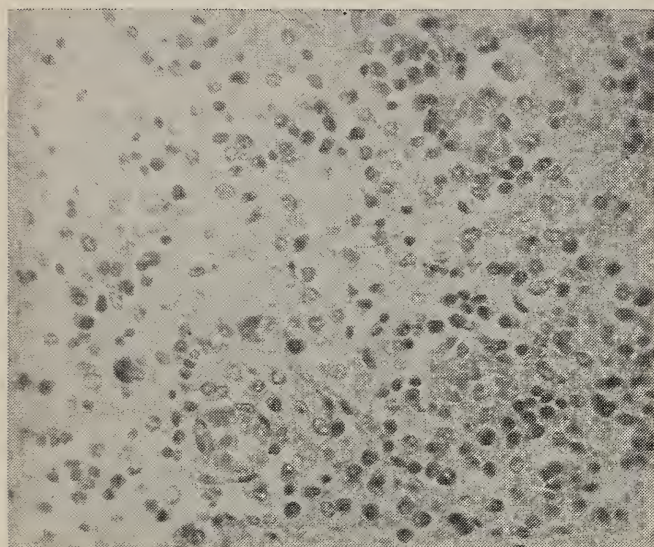


FIGURE 4. Inflammatory exudate in leptomeninges.

This organism was checked in that regard and there was adequate therapy given as far as the serum was concerned.

We might make a few passing remarks about the sensitivity of this organism to streptomycin. In practically every culture of *Hemophilus influenzae* one would encounter some of the cells that are at least potentially resistant to streptomycin. If an inadequate amount of streptomycin is given, quickly these organisms are pure cultured, so that sometimes even overnight one is dealing with an organism, practically every cell of which is resistant to at least 1,000 micrograms of streptomycin per ml., which is a real resistance. This speaks well for adequate streptomycin therapy even from the beginning.

Dr. McQueen: We have referred to the importance of the early diagnosis of influenzal meningitis as it affects the course of the disease. A summary of the 1948 cases shows that there were no deaths among the patients seen within the first three days of symptoms. As the number of days between the onset of the disease and the starting of therapy increases, the mortality increases. Some of those children whose disease was treated late did not die during the acute stage. Some of them died of the severe central nervous system residuals of the infection. Some of them lived to require custodial care.

This brings up another problem of influenzal meningitis; the severe neurological sequelae of the disease. Dr. Sahs will discuss this problem.

Dr. Adolph L. Sahs, Neurology: First of all, I would like to make one addition to the protocol; namely, the glucose content of the spinal fluid. Spinal fluid sugar values are of great value in the diagnosis of pyogenic meningitis and in the evaluation of therapy. In this instance, the spinal fluid glucose content was 25 mg. per 100 cc. on admission.

When a patient with meningitis does not progress well, it is important to try to determine whether he has an infected focus adjacent to the meninges. If he does have such an infected area, the meninges may be repeatedly seeded with infected material even though sulfonamides and antibiotics are administered in what should be adequate dosages. In other words, if an abscess is present near the meninges, that abscess should be treated by surgical drainage. I incorrectly came to the conclusion that this was an instance of thrombosis of cortical veins as a result of meningitis. I was probably influenced by several cases which we had had immediately preceding this one. These patients had a similar course and were found to have venous thrombosis at autopsy.

The complications of meningitis can be divided into several groups. The first is that series of complications which is associated with the bacteremia which accompanies certain types of meningitis, particularly meningo-coccic. Joint disease, iritis, gangrene and a number of other lesions can result from the bacteremia. The sequelae of meningitis itself can be numerous. The important ones are directly related to the inflammatory changes and plastic exudate around the cranial nerves and over the surface of the brain. I might list the following types of disorders as illustrative of this point: paralysis of ocular rotations due to involvement of the third and sixth cranial nerves, blindness, deafness, hydrocephalus, memory defects, behavior disorders, epilepsy, hemiplegia and paraplegia. The third group includes the complicating factors which are brought out by this case today. In dealing with a case of meningitis, the physician should always ask himself, "Is there a focus of infection remaining, one which is capable of reactivating the meningitis?" These abscesses, if present, will usually be found in the mastoid cells, in the paranasal sinuses, in the epidural space, in the subdural space or in the brain itself. Identification of such an abscess and the institution of surgical drainage is of the greatest importance in the treatment of meningitis. Fourthly, I might list the complications which sometimes occur as the result of therapy. You are all familiar with the reactions which sometimes occur after the administration of the sulfonamide drugs. Streptomycin and dihydrostreptomycin are capable of producing harmful effects on the eighth nerves. Intrathecal therapy with penicillin and other preparations has been followed by severe reactions on occasions. The result may be paraplegia, chronic arachnoiditis or both.

Dr. Russell Meyers, Neurosurgery: No one thing

is more important than the opportunity afforded to examine objectively our methods of thinking. It is the business of scientists to examine objectively the phenomena about them; it is of equal importance that they examine their ways of thinking about and evaluating those phenomena.

Dr. Sahs was asked to see this patient within the first 24 hours of admission. He concluded from the available evidence that the diagnosis of influenzal meningitis was warranted and advised conservative treatment. With proper caution, he recommended neurosurgical consultation on the small chance that surgery might be employed, if not at that time, then perhaps later. I examined the patient a few hours later and my findings and working diagnosis concurred with his. Hydrocephalus was in evidence. The pupils were equal, hippus was present bilaterally and the optic fundi disclosed bilateral papilledema. The lid veins were prominent, indicating a considerable deficit in cerebral venous return. There was a definite loss of synergy of ocular movements. The only responses that could be evoked from the child were random mass activities, non-specific in type. These indicated a widespread and intense neurological insult, consistent with a diffuse process such as acute meningitis. The movements of the right-sided limbs appeared slightly more vigorous, though no more adaptive, than those on the left. A left Babinski sign was elicitable and the tendon reflexes on the left side appeared slightly greater than their fellows.

My tentative diagnosis made on November 14, consisted of six items as follows: 1. acute influenzal meningitis; 2. mesencephalitis, secondary to number 1; 3. plastic exudate over the base of the brain and encompassing the mid-brain where the incisura of the cerebellar tentorium encircles the brain stem; 4. hydrocephalus due to obstruction cerebrospinal fluid circulation at the margins of the incisura of the tentorium; 5. thrombosis or thrombophlebitis or cortical veins entering the superior longitudinal sinus from the convexity of the right hemisphere and 6. possible abscess of the right hemisphere involving the parietal and frontal lobes.

At this point it is necessary to remark that thrombosis of cortical veins as a complication of meningitis is far more frequently responsible for focal signs than is brain abscess. Statistical expectations, therefore, favored a thrombosis as a most likely basis of the meager focal signs presented by the patient. With these considerations in mind I set down the following note: "Surgery is not now in order. Advise conservative, supporting, chemotherapeutic and antibiotic measures. Notify if patient becomes worse. We will then consider ventriculography."

In reviewing the case as we now know it to be, the question may fairly be raised, "Why was surgery deferred if brain abscess was even a possibility?" Our answer is that in the presence of meningitis, brain surgery carries genuine risks even if

merely diagnostic surgery. Before he recommends adding risk to pre-existing risk, the surgeon must be reasonably certain that the clinical evidence points strongly to the existence of the postulated surgical lesion. The price of being wrong is high. To have proceeded with ventriculography on the available evidence would have entailed passing a ventricular cannula through a subarachnoid space already known to be infected. If no brain abscess were present, the chances of inoculating the brain through the infected meninges and thus of producing ventriculitis or an intracerebral abscess would have been considerable—too considerable, in my opinion, to have been risked. I felt that if this patient could be held at all by conservative measures, we should employ them until and unless the situation changed. As it turned out, the institution of conservative measures was followed by progressive improvement. Within a month the patient was discharged from the hospital. Of course, it was possible that she already harbored a brain abscess at the time of discharge; but if so, it is certain that such was not her only pathologic lesion. Even now it is not possible to regard the abscess as the unmistakable cause of the difficulty which brought her back to the hospital. She was known to have had a serious infection of the subarachnoid space, characterized by numerous plastic meningitic loculations and that the latter might still be smoldering with attenuated organisms. Any one of these, singly or in combination, with or without an abscess, could have given rise to her fatal ventriculitis.

In retrospect I find it difficult to suppose that indications for surgical intervention were present during the first admission. When the child was readmitted for the second time, she was apparently in a premoribund state with an established ventriculitis—a grave pathologic condition which is beyond the help of surgery. Neurosurgical consultation was not sought during the second admission.

Dr. McQueen: Although a discussion of therapy is without the scope of this conference, I think it should be mentioned that at the present time chloramphenicol has proved itself to be the drug of choice for treating the patient with influenzal meningitis. No longer do we need concern ourselves about streptomycin toxicity and antiserum reactions. A new day, as far as therapy, has occurred; but it must quickly be pointed out that the need for early therapy has not decreased. If chloramphenicol is not started early in the course of the disease, the irreversible central nervous system will occur.

I think we might summarize this case to point out there are difficulties related to the clinical identification of meningitis; there are difficulties related to the bacteriological diagnosis of Hemophilus influenza B. There is a direct relationship between early therapy and a favorable response to treatment.

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The Hundredth Meeting

The Iowa State Medical Society has just concluded its hundredth meeting at Sioux City. Due to the fact that no meeting of the Society was held in 1863, during the Civil War, this was the hundredth meeting of the Society although it was held in the first year of the second hundred years.

The Woodbury County Medical Society, its Woman's Auxiliary and the members of the Chamber of Commerce of Sioux City deserve the heartfelt thanks of the medical profession for their wonderful hospitality and splendid cooperation. Not only was the meeting most successful from a scientific standpoint, but also from the standpoint of cordiality and friendship. Many Sioux City physicians entertained their friends throughout the meeting, and the buffet supper served Monday night by the county medical society was very much appreciated. Sioux City business firms were most generous in providing favors and flowers for the ladies all three days of the session.

The social hour given through the courtesy of the Physicians and Hospitals Supply Company preceding the banquet was a gracious gesture. Arrangements for the banquet, made by the Woodbury County committee and Auxiliary, were well done and the evening was greatly appreciated.

Attendance at the meeting was good. There were 615 Iowa physicians registered, 353 guests, many of them physicians from Nebraska, South Dakota and Minnesota, 185 Woman's Auxiliary and 123 exhibitors, making a total of 1,276. In Burlington last year we had 561 members, 113 guests, 110 exhibitors and 134 Woman's Auxiliary, for a total of 918. In Des Moines in 1949 the figures were

850 members, 103 guests, 130 exhibitors and 175 Woman's Auxiliary, a total of 1,258. Thus it will be seen the total for Sioux City topped that of the last year the meeting was held in Des Moines, even though there were fewer Iowa physicians registering.

The guest speakers presented excellent papers and attendance at the scientific meetings ran high.

The scientific exhibit section was the largest ever presented. It was made possible through the kindness of individual doctors from Iowa, Illinois, Minnesota, South Dakota, and by exhibits from Creighton University School of Medicine and the State University of Iowa College of Medicine. There were about 45 exhibits in this section, all of them deserving of time and study.

The technical exhibits were good. Several new firms were present and it is hoped they found their participation worthwhile. They help finance much of the cost of a meeting and deserve the interest of the physicians.

The new auditorium in Sioux City is a beautiful building and adapted itself fairly well to the requirements of our meeting. The biggest drawback was the lighting system which did not lend itself to our projection needs. In other respects it provided good accommodations and its employees were most cooperative in working to make the meeting run smoothly.

If one judges the worth of a meeting by the criteria of excellence of program, educational value of exhibits, facilities of meeting place and renewal of warm ties of friendship, then the Sioux City meeting will rank high.

Jet Injection of Drugs

Much interest among the lay public has been awakened by the announcement in newspapers that a new method of the administration of drugs has been made available to the medical profession. This is the first fundamental advance in the technique of parenteral medication since Alexander Wood employed the hollow needle a century ago.

Through the use of the jet injector, termed a "Hypospray," it is possible to send a tiny jet of various drugs at high velocity through the skin to the desired depth for either intramuscular or subcutaneous injections. The instrument itself is a little smaller than the ordinary two-cell flashlight and weighs about the same. A sterile cartridge of the medicine to be injected is inserted into the nosepiece. Since the cross section area of the jet is 22 times smaller than the usual small hypodermic needle, comparatively few pain fibers are affected and the tissues are subjected to much less trauma. After penetration, the diffusion of the drug occurs more widely than a needle injection, assuring better absorption. One of the obvious advantages, more especially for children, is the relative freedom of fear of the needle.

The "Hypospray" is manufactured by the R. P. Scherer Corporation of Detroit, Mich. Arrange-

ments have been made with E. R. Squibb and Sons to provide the sterile drug cartridges.

At the present time the use of this instrument has been confined to the area around Akron, Ohio. Nationwide distribution will be accomplished as rapidly as permitted by the production of instruments and the manufacture of special cartridges.

Awards Given at Annual Meeting

In any profession or in any way of life, there will always be a few men who do more than their share in working for the good of humanity. There will always be some who seek continually to improve conditions for their fellow men. None of these goes unhonored or unsung; all receive credit and thanks in some manner.

There are times, however, when it seems only just to recognize publicly the contributions made by certain individuals. With that in mind, the board of trustees at the Sioux City meeting presented awards of merit to Dr. Martin I. Olsen of Des Moines for his work in setting up Blue Shield in Iowa and to Dr. Clyde A. Boice of Washington for his long service on the Council. Both men richly merit the thanks of their colleagues for what they have done for the medical profession.

Another award given this year for the first time was that of outstanding general practitioner. The American Medical Association has given such an award for the past four or five years, nominations being made by the various states and the final selection being voted by the House of Delegates.

Five nominations for this award were presented to the House. One, a beautifully prepared booklet setting forth the achievements of Dr. Frank J. Kriebs of Elkport, together with expressions of appreciation from many people and organizations in his community, was not considered because of Dr. Kriebs' death the week before the meeting.

Two other booklets were prepared for other candidates, neither of them as well done as the one for Dr. Kriebs, yet containing many letters as evidence of the high esteem in which both physicians are held. No booklets were prepared for the other two candidates.

The task of the reference committee which studied these nominations was not an easy one. Without personal knowledge of the candidates, the committee had to make its recommendation upon the basis of evidence presented. This is also true in the American Medical Association where personal knowledge is impossible. Since the man chosen in Iowa is to be nominated for the AMA

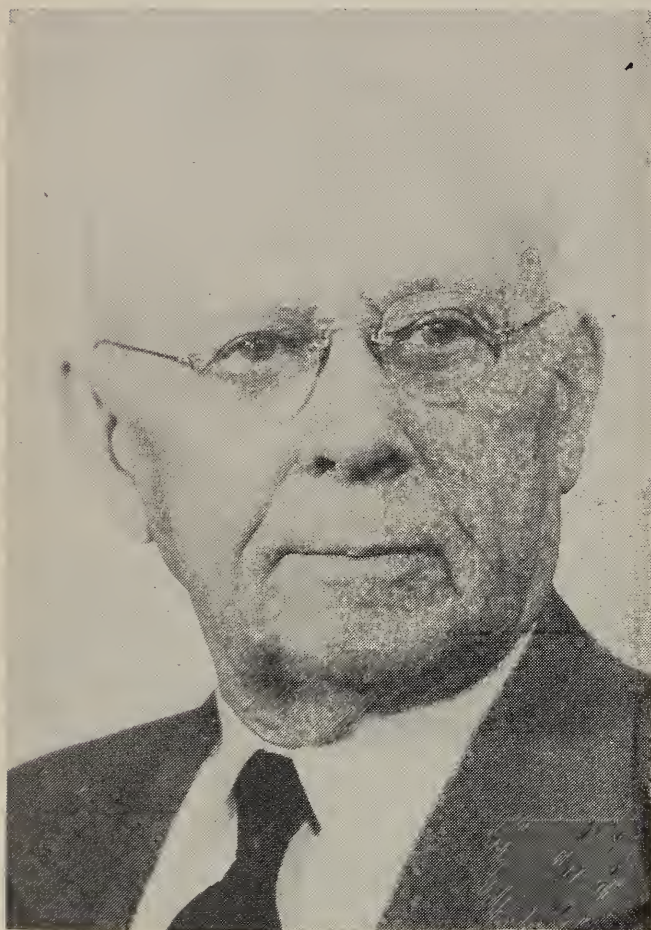


HONORED AT ANNUAL MEETING

Dr. Martin I. Olsen and Dr. Clyde A. Boice are shown being congratulated by Dr. Robert N. Larimer, Chairman of the Board of Trustees, after they received honorary awards at the recent Annual Meeting in Sioux City.

award, it was necessary that the committee take the material evidence into consideration.

Using that yardstick, the committee recommended that Dr. Ambrose E. Wanamaker of Hamburg be chosen for the outstanding general practitioner of the year in Iowa. Many, many letters nominating Dr. Wanamaker were presented. All of the physicians in his county wrote praising him, and in addition many civic groups and leaders added



WINNER OF GP AWARD

Dr. Ambrose E. Wanamaker of Hamburg was the recipient of the 1951 General Practitioner's Award at the recent Annual Meeting in Sioux City.

their words of commendation. The booklet was eloquent evidence of the esteem and affection in which Dr. Wanamaker is held.

It does not detract in any way from Dr. Wanamaker's selection to say that the other physicians nominated were also outstanding men. It is to be hoped that their names may be submitted another year for consideration. It is also to be hoped that county medical societies recommending a physician for this honor will implement the nomination with supporting evidence from the community and will present this evidence in the most attractive form possible.

May we also hope that the three physicians who did not receive the award will realize their nomination stemmed from the love and appreciation of their fellow physicians and community and that this in itself is a great tribute. Not all who deserve

it can possibly win the award if only one is given each year. The men who are nominated, however, have through their lives shown a bigness which will enable them to meet such situations graciously and magnanimously. If they did not possess that quality, we doubt whether they would ever be selected for the honor of nomination, and honor it is.

We salute the nominees and the winner, and thank them for their contribution to the spiritual values of medicine.

AMA Meeting

The one hundredth annual session of the American Medical Association will be held June 11 to 15 in Atlantic City, N. J. The experience of past meetings in Atlantic City has provided many pleasant memories. The AMA's centennial meeting in 1947 attracted the largest medical attendance that any convention ever had. Advance information would indicate that the 1951 session may be at least equal in attendance and scope.

The scientific program, which includes lectures, demonstrations, exhibits, motion pictures and television broadcasts of hospital, surgical and medical problems, is intended to serve all physicians, not just those with a special interest. The program, which required months of planning and participation by many physicians and others shows in part what is done for the medical profession by the AMA.

All doctors are invited and urged to attend this most worthwhile 1951 Atlantic City meeting.

Justification of the Small Rural Hospital

Undoubtedly scant supervision and freedom of initiative has and will continue to encourage abuse of privileges in the small, segregated county hospital. With this in mind a careful survey was made of a hospital opened to the public ten months ago near Des Moines. Results of this study have been most gratifying although this particular hospital may not exemplify the conditions in all other hospitals of like size. It does seem evident that with the right ideals on the part of the management and the staff of such a hospital a great deal of good can be accomplished with a minimum of risk and certainly with a lessening of the strain on the large city hospitals now so overcrowded.

This hospital has a capacity of 39 beds. Admissions during the ten months total 759 plus 163 newborn. There were 289 medical cases admitted, 228 surgical and 175 obstetrical. About seven and one-third per cent of those admitted were county patients.

There have been 88 major operations and 140 minor surgical procedures. Of the major operations, 64 or about 80 per cent were performed by Des Moines surgeons, orthopedic surgeons, a gynecologist, a neurosurgeon and a Des Moines osteopath who did two appendectomies. Twenty-four

majors were done by general practitioners. Many of these were appendectomies and herniotomies. One was a hysterectomy for a fibroid uterus and one a subtotal hysterectomy and left salpingo-oophorectomy for chocolate cyst and fibroid. Several fractured hips were well cared for by a general practitioner who had had considerable training and practice in orthopedics. It would seem that no general surgery has been attempted by the local general practitioners for which they were not competent.

To date there have been two post-operative deaths or a gross mortality of about two and one-fourth per cent. Of these one was a carcinoma of the colon and the other an open reduction on a fractured femur in a senile patient.

There have been no pediatric deaths, as critically ill babies on those who impose a severe diagnostic problem are referred to a Des Moines pediatrician. The only exception was one neonatal death probably due to birth injury. There have been four stillbirths.

Surgical pathological specimens are sent to the pathology laboratories of the Iowa Methodist Hospital with the exception of hernial sacs and appendices which are recorded in the local hospital.

There have been 32 deaths in the past ten months, mostly senile patients. Since the hospital has never had to refuse an admission because of lack of space many deserving patients, too ill to live at home, are provided much better than nursing home care in this institution where their local friends and family may visit them often.

Cardiac patients are particularly happy in such a quiet, completely equipped hospital. Oxygen is always available through tents, hoods or nasal equipment. Electrocardiograms are taken by the hospital technician.

Patients voice their appreciation of the nursing personnel as it is made up of mature, experienced graduate nurses, assisted by competent aids who also are capable women of mature years.

There is a walking blood bank and it has worked satisfactorily. The Red Cross proposes to set up a station in the near future. X-ray equipment is of the best and an experienced roentgenologist interprets all films. Surgical instruments are owned by the hospital and are available to members of the staff and visiting surgeons. The competent surgical supervisor, formerly from a Des Moines hospital, states that she has had no trouble getting anything she wanted. The administrator has had years of experience in a large Des Moines hospital and lends his aid in cooperating with the staff and personnel and also in seeing that the patients are satisfied.

This sounds like a utopia for the ill. True, there are no residents nor internes and these are missed, but with the remarkable cooperation of the staff members, no one of whom would refuse to see a patient for a fellow staff member if need be, and among whom professional jealousy is unknown,

the patient is assured service night or day if required. This modern small county hospital is surely a far cry from the one man, understaffed, ill equipped small hospitals that served many small towns a half century ago.

PHYSICIANS' ART SHOW

The American Physicians Art Association will have an art exhibit during the AMA convention June 11 to 15 in Atlantic City, N. J. Any physician in the United States, Canada and Hawaii desiring to participate in this show should communicate with F. H. Redewill, M.D., Secretary, American Physicians Art Association, 760 Market Street, Room 1058, San Francisco 2, California.

1951 PLASTIC SURGERY AWARDS

The Foundation of the American Society of Plastic and Reconstructive Surgery offers Junior and Senior awards for original contributions to plastic surgery. The Junior award consists of two scholarships in plastic surgery of six and three months respectively. This contest is open to plastic surgeons in the specialty not longer than five years. The Senior award consists of an essay on "Mass Treatment of Burns in Atomic Warfare" and the winning essays will appear on the program of the annual meeting of the American Society of Plastic and Reconstructive Surgery this fall in Colorado Springs, Colo. All entries must be received by the chairman not later than August 15. For full particulars write to The Award Committee, c/o Jacques W. Maliniac, M.D., 11 East 68th Street, New York 21, N.Y.

JULY JOURNAL

The July Journal of the Iowa State Medical Society will be the annual official issue. This issue will contain the transactions of the House of Delegates in their meeting at the One Hundredth Annual Meeting in Sioux City and a roster of members of the State Society. Any changes or additions to the roster should be sent to the Journal, c/o the Central Office prior to June 10.

SPEAKER'S BUREAU RADIO SCHEDULE

WOI—Thursdays at 11:15 a.m.
The Drugs You Use

June 7	Cosmetics
June 14	Asthma and Hayfever
June 21	Heart, Kidney and Blood Pressure Ailments
June 28	Hormones and Fat Reducers

WSUI—Tuesdays at 11:45 a.m.
Keeping Your Baby Well

June 5	Overweight Babies
June 12	Vomiting and Diarrhea
June 19	Vitamins
June 26	Allergy

President's Page

In succeeding months, I should like to explain the function of components of the State Society. The Council is composed of eleven members, each Councilor representing nine counties. A Councilor is nominated by delegates from his district and elected to serve three years by the House of Delegates. A Councilor may not serve more than three terms. His function is that of organizer for his district. He should visit each county society during the year where, by advice and inspiration, he may stimulate the county units toward better service to their members and keep them abreast of happenings in the state organization. Each Councilor should have a deputy in each county.

The Council work is largely advisory; however, as members of the Executive Council, which includes in addition to the eleven Councilors, the Officers, Trustees and Delegates to the AMA, therein they serve as a legislative body in the interim between authorized meetings of the House of Delegates. It is my plan this year to have quarterly meetings of the Executive Council that a better knowledge of all society business may be quickly and adequately forwarded to the component county groups.

I would ask each county society to invite its Councilor to one of its regular meetings this year. You will find him anxious to serve you and help with any of your problems.

Donald C. Conzett, M. D.

President

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. HOWARD W. SMITH, Woodward

President-Elect—MRS. J. DONALD HENNESSY, 205 Frank St., Council Bluffs

Secretary—MRS. CHARLES F. LOWRY, 246 Lincoln, Council Bluffs

Treasurer—MRS. DWIGHT C. WIRTZ, 449-56th St., Des Moines

REPORT OF ANNUAL MEETING

The twenty-second Annual Meeting of the Woman's Auxiliary to the Iowa State Medical Society opened with an executive board luncheon at the Hotel Warrior, Sioux City, April 23. Mrs. Claire H. Mitchell, president, presided at all meetings. Dr. Mary L. Lyons discussed vocational rehabilitation work on the state level. Mrs. Carl Hanson reported on the Future Nurses Club in Waterloo and its influence upon nurse recruitment. Mrs. Theodore Heinz, Greeley, Colo., Public Relations Chairman of the National Auxiliary, stressed the importance of membership of doctors' wives in various organizations in order to combat the trend toward socialized medicine. Routine business was dispatched.

On April 24 the meetings were held at the Y.W.C.A. Following an invocation by Rev. George W. Dunn, Mrs. Martin A. Blackstone, president of the Woman's Auxiliary to the Woodbury County Medical Society, welcomed the members. Mrs. Howard W. Smith, President-Elect of the Woman's Auxiliary to the Iowa State Medical Society, made the response.

Mrs. Thomas E. Kane, Chairman of Public Relations, presented a panel discussion on "The Challenge to Active Auxiliary Work." Mr. Don Taylor, Field Secretary of the State Society, explained the advantages of voluntary health insurance with emphasis on Blue Cross-Blue Shield. He urged every doctor's wife to be well-informed on this subject so that she may explain it intelligently to others. Mrs. Lester R. Hegg discussed the ways and means by which a doctor's wife may improve public relations. Although it is necessary to spend about 75 per cent of one's time for home and family, it is wise to spend the other 25 per cent judiciously. Doctors' wives should accept responsibility in public health work, health drives, the Red Cross, P.T.A., Women's Clubs and other activities which promote better living and better health for all. She pointed out that "The Auxiliary is the key to the solution of civil defense." Mrs. Theodore Heinz commented on the need for improved relationship between doctors, their wives and the nursing profession. Having been a nurse, Mrs. Heinz learned that "her profession gave her more than the opportunity to make a living, but something which made her more aware than ever

that we must never sacrifice our American freedom for socialism in any form, disguised, or otherwise." The nurse shortage could be taken care of by 1960 if we turn out 3,000 nurses per month. We can and must help with recruitment. Mrs. Edward B. Hoeven spoke about citizenship stressing the need for keeping informed on legislation which particularly relates to health. We must help inform others and we must vote. It is well to know what candidates believe in and to write our opinions to Senators and Representatives. Mrs. Hoeven warned of Oscar Ewing's "cunning method of sneaking bills into the Senate to encourage socialization of medicine." Mr. I. W. Meyers, State Society Legal Counsel, summarized the panel as follows: (1) Help to retain the "American Way"; (2) Promote voluntary health insurance; (3) Strive for better relationship between our profession and others and (4) Accept our responsibility as citizens of this free America and help others to accept theirs.

Following a coffee hour served by the Woodbury Auxiliary, the meeting was resumed with another panel discussion "Enjoy Your Privileges." Mrs. J. Donald Hennessy was chairman. She pointed out that "There should be a great joy realized from taking an interest in your husband's profession." She urged that doctors' wives keep informed; promote interest in health insurance the voluntary way and work on nurse recruitment. Mrs. George A. Paschal discussed "The New Auxiliary," its organization problems and aims. The Hamilton County Auxiliary has concentrated on informing itself on community health organizations, holding offices and helping with health drives and working in worthwhile civic groups. Mrs. Don F. Rodawig considered the "Small Auxiliary" with re-emphasis on topics all ready discussed. She recommended the encouragement of the general practitioner who can be so important to a community. A community without a general practitioner is likely to turn to other sources for medical care. Doctors should be encouraged, too, to stay within the fees allowed by Blue Cross-Blue Shield insurance. Mrs. Chester L. Putnam talked about "The Large Auxiliary," the advantage of which lies distinctly in numbers. A large number of members can accomplish a bigger assignment and extend a more widespread influence in health matters. All

doctors' wives should be members. Dr. Isaac Sternhill discussed "How We Can and Should Help the Medical Profession." He referred to the evils of socialization and said that we need to "support the local community by *doing*—not by signature. There are two kinds of people; those who do a lot and those who do nothing. Which are you?"

There were 150 members and guests present at the luncheon which followed the morning meeting. Dr. John W. Cline, President-Elect of the AMA, spoke. He referred to the threat of socialism as the



NEW AUXILIARY OFFICERS

Mrs. Howard W. Smith, right, is the newly elected president of the State Auxiliary and Mrs. J. Donald Hennessy is the new president-elect.

challenge of our times and stressed the need for alertness, information and activity. Good press relations in particular are of the utmost importance. The Woman's Auxiliary should rate the highest esteem of the Medical Society and can do so by consistent endeavor. Dr. Cline outlined the duties and accomplishments of the AMA and its excellent contributions to improved health conditions, medical schools and science. He said, "To keep free, sound government we must exercise our rights as citizens, join other organizations and use our influence to maintain our way of life; we have an obligation to others as well as to ourselves."

On April 25 meetings were held at the Warrior Hotel. Routine business was dispatched and reports read. Some of these will appear at a later date in "The Woman's Auxiliary News." More than 185 members and five guests registered at the meeting. Mrs. Dwight C. Wirtz, treasurer, reported a balance of \$1,806.87 on hand as of April 15. As acting chairman of the Finance Committee she presented the proposed budget for 1951-52 which will be printed in a later issue. A resolution authorizing the treasurer to pay routine bills upon signature

of the president with signature of the secretary to be obtained later, was passed.

Mrs. Elbert T. Warren, acting Chairman of Revisions, presented proposed revisions to the by-laws, all of which passed. They were, in brief: (1) State dues shall be fixed, upon recommendation of the board, at each annual meeting by the voting delegates; (2) Annual dues are payable on or before January 1 of the year for which they are levied and are delinquent after March 1 of that year and (3) There shall be one Councilor for each Councilor district, and the districts of the Woman's Auxiliary shall correspond to those of the Iowa State Medical Society. In keeping with the revision that state dues shall be fixed upon recommendation of the board at each annual meeting by voting delegates, a motion was passed increasing the state dues by one dollar for the coming year.

Mrs. Allan G. Felter was in charge of a beautiful memorial service in memory of the following members who died during the past year: Mrs. W. H. Thompson, Winterset; Mrs. Marion E. Anderson, Clinton and Mrs. E. L. Lamp, Belvein.

Mrs. Charles A. Nicoll, Chairman of the Resolutions Committee, presented resolutions of gratitude for the convention this year. The hospitality, the entertainment, music by the East High School students, flowers and lovely souvenirs will make this meeting a delightful memory always.

Officers and councilors were duly elected after which they were installed by Mrs. Fred Mulsow. The following officers were elected: president, Mrs. Howard W. Smith, Woodward; president-elect, Mrs. J. Donald Hennessy, Council Bluffs; first vice president, Mrs. George G. Crow, Burlington; second vice president, Mrs. Loyd K. Shepherd, Des Moines; secretary, Mrs. Charles F. Lowry, Council Bluffs; treasurer, Mrs. Dwight C. Wirtz, Des Moines and assistant treasurer, Dr. Jeanette D. Throckmorton, Des Moines; councilors: Mrs. Clayton W. Clark, Nashua; Mrs. Soren S. Westly, Sr., Manly; Mrs. Lester R. Hegg, Rock Valley; Mrs. John D. Lutton, Sioux City; Mrs. Roger M. Minkel, Ft. Dodge; Mrs. Claire H. Mitchell, Indianola; Mrs. James F. Gerken, Waterloo; Mrs. Lonnie A. Coffin, Farmington; Mrs. Ralph J. Selman, Ottumwa; Mrs. Allan G. Felter, Van Meter and Mrs. Charles H. Flynn, Clarinda.

The following delegates and alternates were elected to attend the National Meeting at Atlantic City, June 11 to 15: Mrs. J. Donald Hennessy, Council Bluffs; Mrs. Lester R. Hegg, Rock Valley; Mrs. Ralph J. Selman, Ottumwa; Mrs. Thomas J. Vineyard, Ottumwa; Mrs. Claire H. Mitchell, Indianola; Mrs. Frederic G. Loomis, Waterloo; Mrs. Fred W. Mulsow, Cedar Rapids and Mrs. Elbert T. Warren, Stuart.

As a final highlight, the Hayes Women's and Misses Apparel Shop of Sioux City presented a

delightful style show for which members of the Woodbury County Auxiliary acted as models.—

MRS. K. M. CHAPLER.

PRESIDENT'S REPORT 1950-51

The work of the Woman's Auxiliary to the Iowa State Medical Society is to be found in the reports of various committee chairmen. It is evident from these reports that progress is being made and we are increasing and strengthening our effort toward our objectives.

I want to express my sincere appreciation for the untiring efforts of the state officers, the county presidents and their boards. Their interest in our work has made an Auxiliary possible.

I would like to take this opportunity to express my debt of gratitude to the staff of our State Society for their ready and able assistance during my term of office. This has proved most valuable, helpful and encouraging.

During this past year my aim has been to strengthen our state committees and strengthen the county auxiliaries. Each state officer has had her committees and has called them together for conference at least once. Our membership has increased during the past year. Three new counties have been organized and the members-at-large have doubled. We now have but 14 red dots left on our map.

As your president I have attended two national meetings; the Woman's Auxiliary to the AMA in San Francisco and the Chicago Conference for state presidents and president-elects in November. These were helpful in teaching us the "know-how" of auxiliary work and by inspiring us with useful information.

I have represented your Auxiliary at several meetings within the state. With your president-elect I attended ten of the eleven District meetings of the State Medical Society. The informal discussion held at these meetings gave us a much better idea of the work on the local level and helped us to become acquainted with our membership. A total of 195 different women attended these eleven District meetings.

In June I was asked as president of the Auxiliary to meet with the Board of Trustees of the Medical Society to discuss our common goals. This paved the way for a very agreeable working relationship between the two groups this year. They were very generous in offering the services of their office for our convenience at any time. This has been much appreciated.

There have been three meetings of the Board of Directors for the Auxiliary. Three proposals have developed from them. First, that the state be divided for Auxiliary work into districts corresponding to the Medical Society. This will make it easier to assist the county auxiliaries and to complete the organization of the state. Each District will

be headed by a councilor who will represent the state president in her district and serve as resource person for county auxiliaries. Second, the increase of state dues in order that we might become more nearly self-supporting and make available funds for the councilors to use in promoting the work of the Auxiliary. Third, that we print a modified year book for this coming year as a trial venture to determine its usefulness in Auxiliary work.

At this point I close and salute my successor, Mrs. Howard W. Smith. To her I pledge my untiring support as she carries on the program as outlined to us by the AMA, the Iowa State Medical Society and the Woman's Auxiliary. She will carry on with the wisdom, the intelligence and the selflessness of purpose which is hers by inheritance, education and training.

MRS. CLAIRE H. MITCHELL.

PRESIDENT-ELECT'S REPORT 1950-51

During the past year it has been my privilege to *watch* and *learn* and to prepare for the future.

The Annual meeting at Burlington, April 23 to 24, 1950 was an inspiration and a challenge for every doctor's wife. I had an opportunity to meet doctors' wives from all over the state. Old acquaintances were renewed and new friendships formed.

I sat in conference at two of the meetings of the Student Nurse Recruitment and Loan Fund Committee. This committee worked hard the past year to furnish program material for county auxiliaries and members-at-large.

I attended a meeting of the Steering and Advisory Committee of the Iowa State Survey of Nursing Needs and Resources sponsored by the Iowa State Nurses Association. I am serving as treasurer for the special project that is being conducted. This survey, when completed, will not only be of value to the nurses of Iowa, but also to the doctors and hospitals.

I have also attended the Board meetings of the Woman's Auxiliary to the Iowa State Medical Society called by the president, Mrs. C. H. Mitchell.

I represented the Woman's Auxiliary at the Iowa Conference on Children and Youth held in Des Moines, October 20, 1950. A report of the Conference is printed in the "Woman's Auxiliary News" of December, 1950.

The president and president-elect of the Woman's Auxiliary to the Iowa State Medical Society were invited to attend the District meetings of the Iowa State Medical Society. Eleven meetings were held, I attended eight of them. The wives of the doctors in the district were also invited to a dinner and the meeting. Mrs. Mitchell spoke at the joint meeting. Here was an excellent opportunity for the doctors as well as the women to learn more about the objectives and program of the Auxiliary. The informal discussion which the women had

following the joint meeting was good. It was here that they became better acquainted.

I believe that the Auxiliary would benefit greatly by continuing the district meetings in the future. More can be accomplished if district Councilors can plan in advance for a workshop or program to assist the County Auxiliaries to plan for greater activity on the county level. There is a need to bring the County Auxiliary and the State Auxiliary to the Medical Society and should seek prepared to carry out any program they wish emphasize that the district councilors have a real purpose in assisting with the correlation of our program between the county and state level.

We should always keep in mind that we are an Auxiliary to the Medical Society and should seek advice and approval from them first of all. Be prepared to carry out any program they wish emphasized.

One of the great events of 1950 for me was attending the Seventh Annual Conference of State Presidents, Presidents-elect and National Chairmen of the Woman's Auxiliary to the American Medical Association in Chicago November 2 to 3. It was a real privilege to sit in meeting with doctors' wives representing every state in the Union except four. The Conference theme was Public Service Through Health Education.

We learned a great deal about organization, public relations, program, legislation and *Today's Health* through the use of panels. Each panel had a moderator, who was the National Chairman for the respective committee. From six to eight state presidents took part in each panel, thus giving nearly every state president a part in the program. In this way we learned what other state auxiliaries are doing. The *National Bulletin* for December, 1950 has the full reports of the Conference. I urge all members to subscribe to the *Bulletin*. It keeps us up to date on the work of the Auxiliary on the State and National level over the nation.

I have received the Capitol Clinic and the Secretary's Letter from the American Medical Association offices at Chicago and Washington, D. C. I have tried to keep informed on medical legislation through these fine publications.

There is a great deal of information that each one of us should know. An informed doctor's wife can be a public relation committee of one in her local community at all times. It is not only a privilege but a responsibility we owe to our husbands, the medical profession and the public.

I wish to express my thanks and appreciation to Mrs. Mitchell for her co-operation and help at all times.

MRS. HOWARD W. SMITH

AMERICAN MEDICAL WOMEN'S ASSOCIATION

The State Society of Iowa Medical Women, now merged with Branch 19 of the American Medical Women's Association, held its fifty-fourth annual meeting April 23 in Sioux City.

Dr. Emma M. Ackerman of Sioux City presided. It was decided to have a scientific meeting this fall and a breakfast meeting at the 1952 meeting in Des Moines.

Officers elected for 1951-1952 include: president, Dr. Maryelda Rockwell, Clinton; vice-president and president-elect, Dr. Madelene Donnelly, Des Moines; secretary, Dr. Mary Louise Lyons, Des Moines; treasurer, Dr. Jean Jongewaard, Jefferson and national meeting delegate, Dr. Helen Johnston, Des Moines.

ALPHA OMEGA ALPHA INITIATES

On April 9, Alpha Chapter of Iowa, Alpha Omega Alpha honorary medical fraternity held initiation ceremonies at Iowa City. Dr. R. E. Kleinsorge was initiated as an honorary member in absentia. Initiates from the SUI senior class included: A. Norman Dorosin, Enfred E. Linder, Jackson E. Morrison, William A. Mulford and Dwain E. Wilcox. Initiates from the junior class included: Robert Joynt, Robert Mandsager and Robert Soper. The meeting was addressed by Dr. M. A. Blankenhorn, University of Cincinnati Medical College.

PLANNED PARENTHOOD CLINIC

The Des Moines Planned Parenthood's Medical Advisory Committee invites all Iowa physicians who want clinical training or instruction in contraceptive fitting to visit the Clinic at the Iowa Methodist Hospital in Des Moines every Wednesday morning from 10:30 to 12:00. Individual appointments are made at 201 Davidson Building, telephone 4-2909.

MEDICAL LICENSES ISSUED FROM MARCH 5-MAY 1

Medical licenses were issued to the following persons during the period of March 5 to May 1: Arthur T. Austin, Kansas City, Mo.; Florence J. Bouthilet, Mason City; Frank W. Crealock, Iowa City; Herman C. Ellsworth, Omaha, Nebr.; Donald V. Hirst, Council Bluffs; Floyd B. Merritt, St. Louis, Mo.; Carl G. Nelson, Iowa City; Paul J. Trier, Des Moines and Samuel J. Zoeckler, Des Moines.

STATE DEPARTMENT OF HEALTH

Walter Diering

CARE OF THE CHILD WITH MEASLES MODIFICATION AND PREVENTION

Reports to the State Department of Health from local and district health offices in many counties indicate the prevalence of red measles.

Harmful after effects of measles may be avoided by use of immune serum globulin, which is administered after a child has been known to have been exposed to measles. The disease occurs in modified or mild form when treatment is delayed until nearly a week after exposure. By having the disease in mild form a child acquires permanent immunity and escapes serious complications. Measles can be prevented in infants and children with lowered resistance, by using the preventive treatment within four days after exposure to the disease.

Immune serum globulin may be obtained from the State Department of Health or District Health Departments upon request by local physicians. Reporting of cases will give information on the extent of the problem.

Early care of the child with measles may prevent complications of pneumonia and ear infections. Keep the child in bed and away from other people. He is already ill. Avoid any additional infection by keeping others away from him. The patient's eyes should be protected against glare because they are likely to become inflamed. However, the room should not be darkened without the physician's orders. Protect the child from chills and drafts. Special protection is needed against chilling during and following the child's bath. Good nursing care is necessary for all measles patients but is especially important for the pre-school child.

DEATHS FROM MEASLES IN IOWA 1937-1949

Year	Deaths	Year	Deaths
1937	4	1944	24
1938	26	1945	4
1939	29	1946	22
1940	14	1947	3
1941	16	1948	26
1942	16	1949	4
1943	18	1950 (1st 10 mos.)	15
		Total	221

SEWAGE DISPOSAL PLANT FOR ISOLATED RESIDENCES

With the coming of the construction season, many new homes will be built and older homes modernized in rural and outlying areas where a public sewer is not available.

In order to prevent the possibility of creating a local odor and health nuisance or contaminating wells in the nearby locality, the sanitary wastes discharged from the home must receive proper treatment before disposal. The most satisfactory and convenient method of disposing of these sanitary wastes is through a septic tank and subsurface absorption or filter system. These types of systems are capable of removing the objectionable constituents of sanitary sewage sufficiently for the prevention of an insanitary or nuisance condition. The minimum recommended size of a septic tank is 500 gallons *but a septic tank is not sufficient*. Complete treatment is accomplished by the settling out of the solids in the septic tank and by bacterial action on the liquid as it percolates through the soil or filter. The solid material which settles to the bottom of the septic tank is also acted upon by bacteria which converts it to a stable, non-odorous form. This stable material, known as sludge, must be removed from the tank every three to five years and buried.

Proper location of these disposal units is necessary to avoid the possible contamination of any nearby wells. Septic tanks should be a minimum of 50 feet from a private well and preferably 75 feet from such wells and at a lower ground surface elevation. Subsurface absorption or filter systems should be located at least 75 feet from a private well.

Leaching pits (dry wells or cesspools) should not be used for the disposal of untreated human wastes or septic tank effluent because of the depth that must be used with increased possibility of contaminating the underground water-bearing formations. Such pits or cesspools may be used for basement drainage and laundry wastes; however, they must not penetrate within three feet of the ground-water stratum and must not exceed 12 feet in depth.

The Engineering Division of the State Department of Health has a new bulletin entitled "Residential Sewage Treatment Plants" available upon request.

RABIES IN ANIMALS

Quarterly Summary of Reported Cases
January through March, 1951

County	Cases
Black Hawk	Cattle, 1
Boone	cattle, 1; dogs, 1; skunks, 1
Buchanan	skunks, 3
Butler	cats, 1
Calhoun	dogs, 1
Carroll	skunks, 1
Cedar	cattle, 1
Cerro Gordo	cattle, 1; skunks, 1
Clayton	foxes, 1
Clinton	cattle, 1; dogs, 1
Crawford	cattle, 1
Dallas	cattle, 2; dogs, 6; sheep, 2
Davis	cattle, 1; skunks, 1
Dickinson	skunks, 2
Dubuque	foxes, 1; skunks, 1
Fayette	skunks, 2; cats, 1
Franklin	skunks, 1
Greene	dogs, 1; skunks, 1
Hamilton	dogs, 1
Hancock	cats, 1; cattle, 2; skunks, 1; swine, 1
Henry	horses, 1
Howard	foxes, 1
Humboldt	foxes, 1
Iowa	skunks, 1
Jackson	foxes, 1
Jasper	cattle, 1; dogs, 1
Johnson	cattle, 1; dogs, 1; swine, 3
Jones	cattle, 1
Linn	skunks, 1
Madison	cats, 1
Mahaska	cattle, 1
Marion	cats, 1
Marshall	dogs, 1
Mitchell	dogs, 1
Monona	skunks, 1
Montgomery	cattle, 1
Muscatine	cattle, 1
O'Brien	cattle, 2; skunks, 1
Osceola	skunks, 1
Pocahontas	skunks, 1
Polk	cattle, 1; dogs, 29
Poweshiek	cattle, 1
Sac	swine, 1
Shelby	cattle, 1
Story	cattle, 1; dogs, 3; swine, 1

Warren	dogs, 4
Washington	cattle, 8; dogs, 1; skunks, 1
Webster	dogs, 11
Winnebago	cattle, 1
Winneshiek	cattle, 1
Woodbury	dogs, 1
Worth	cattle, 1
Wright	cattle, 1; dogs, 2

The above cases were confirmed by laboratory examination. Additional cases that were diagnosed on a basis of history and clinical manifestations are as follows: Dallas, sheep, 10; Delaware, cattle, 1; Polk, dog, 1; Story, cattle, 2.

This summary clearly shows the wide distribution of rabies in the state. In a three month period,

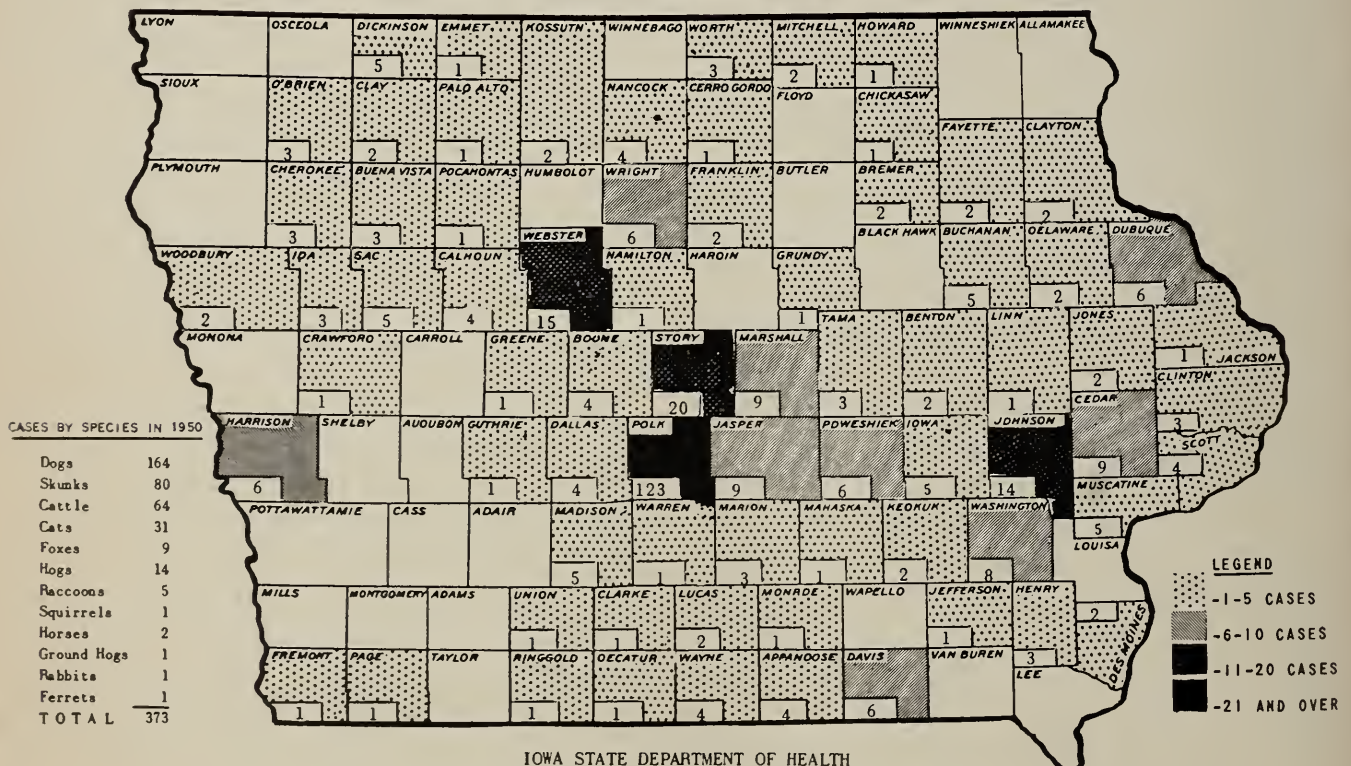
(Continued on page 244)

MORBIDITY REPORT

Diseases	April 1951	March 1951	April 1950	Most cases reported from:
Diphtheria	0	2	1	
Typhoid Fever	0	2	0	
Typhoid Carriers	0	2	0	
Scarlet Fever	52	62	22	Des Moines, Linn, Polk
Smallpox	0	0	2	
Measles	530	210	2945	Des Moines, Dubuque, Floyd
Whooping Cough	22	42	62	Boone, Clinton, Linn
Brucellosis	31	34	15	Cedar, Hamilton
Chickenpox	441	540	626	Black Hawk, Des Moines, Dubuque
Meningitis men.	5	5	3	Fayette, Jasper, Linn
Mumps	321	310	907	Black Hawk, Des Moines, Linn
Pneumonia	7	11	16	Black Hawk, Des Moines, Polk
Poliomyelitis	7	6	8	Linn, Warren (2 each), others scattered
Rabies in Animals	46	50	52	Calhoun, Henry, Polk
Tuberculosis	56	77	81	For the state
Gonorrhea	35	77	49	For the state
Syphilis	127	198	223	For the state

RABIES IN ANIMALS IN IOWA IN 1950

(THE NUMBERS INDICATE THE CASES REPORTED PER COUNTY)



IOWA STATE DEPARTMENT OF HEALTH
DIVISION OF PREVENTABLE DISEASES
VETERINARY PUBLIC HEALTH SECTION

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

ALLERGY: FACTS AND FANCIES, by *Samuel M. Feinberg*, M.D., Associate Professor of Medicine, Chief of Section of Allergy and Director of Allergy Research Laboratory, Northwestern University Medical School; Attending Physician, Passavant Memorial Hospital, President (1941-44) American Association for the Study of Allergy (now American Academy of Allergy). Harper and Brothers, New York, 1951. Price \$2.50.

CLINICAL HEART DISEASE, by *Samuel A. Levine*, M.D., F.A.C.P., Clinical Professor of Medicine, Harvard Medical School; Physician, Peter Bent Brigham Hospital, Boston; Consultant Cardiologist, Newton-Wellesley Hospital; Physician, N. E. Baptist Hospital. W. B. Saunders Co., Philadelphia, 1951. Price \$7.75.

ELECTROENCEPHALOGRAPHY IN CLINICAL PRACTICE, by *Robert S. Schwab*, M.D., Director of the Brain Wave Laboratory, Massachusetts General Hospital and Associate in Neurology, Harvard Medical School. W. B. Saunders Co., Philadelphia, 1951. Price \$6.50.

GROWTH AND DEVELOPMENT OF CHILDREN, by *Ernest H. Watson*, M. D., Associate Professor and *George H. Lowrey*, M. D., Instructor, Department of Pediatrics and Communicable Diseases, University of Michigan Medical School. The Year Book Publishers, Inc., Chicago, 1951. Price \$5.75.

HANDBOOK OF PEDIATRIC MEDICAL EMERGENCIES, by *Adolph G. DeSanctis*, M.D., Professor of Pediatrics and Chairman of the Department of Pediatrics, Postgraduate School, New York University-Bellevue Medical Center; Director of Pediatrics, University Hospital, New York University-Bellevue Medical Center; Director of Pediatrics, Gouverneur Hospital, New York City; and *Charles Varga*, M. D. Instructor in Pediatrics, Postgraduate Medical School, New York University-Bellevue Medical Center; Assistant Attending Pediatrician, University Hospital, New York University-Bellevue Medical Center; Assistant Visiting Pediatrician, Gouverneur Hospital, New York City. C. V. Mosby Co., St. Louis, 1951. Price \$5.00.

IMMUNOLOGY, by *Noble P. Sherwood*, Ph.D., M.D., F.A.C.P., Professor of Bacteriology, University of Kansas and Pathologist to the Lawrence Memorial Hospital, Lawrence, Kansas. The C. V. Mosby Co., St. Louis, 1951. Price \$3.00.

PHILOSOPHY FOR THE COMMON MAN, by *Heinrich F. Wolf*. Philosophical Library, New York, 1951. Price \$3.50.

A TEXT-BOOK OF X-RAY DIAGNOSIS by British Authors, edited by *S. Cochrane Shanks*, M.D., F.R.C.P., F.F.R., Director, X-Ray Diagnostic Department, University College Hospital, London; and *Peter Kerley*, M.D., F.R.C.P., F.F.R., D.M.R.E., Director, X-Ray Department, Westminster Hospital, Radiologist, Royal Chest Hospital, London. W. B. Saunders Co., Philadelphia, 1951. Price \$12.00.

BOOK REVIEWS

BRONCHESOPHAGOGY, by *Chevalier Jackson*, M.D. and *Chevalier L. Jackson*, M.D. (W. B. Saunders Co., Philadelphia, \$12.50).

This book, by a father and son whose names are associated throughout the world with leadership in the fields of bronchology and esophagology, is a truly classical presentation of the current concepts on the subject.

Part One covers anatomy, physiology, pathological physiology, treatment, selection of instruments and details of care of disorders of the air passage. The sections on obstructive laryngo-tracheal disease and obstructive conditions of the bronchial tree are outstanding in completeness and clarity.

Part Two on esophagology covers anatomy, physi-

ology, esophagoscopy and disease and abnormalities of the esophagus. It is of great interest and importance to those who deal with any phase of medical or surgical practice.

Chevalier Jackson's superb color representations depicting endoscopic appearance in normal and abnormal situations are faithfully reproduced in this edition. His diagrams in black and white are also clearly and accurately presented. A noticeable improvement in photography in X-ray and instrument photographs—is found as compared to the previous editions of this work.

The bibliography of 429 references is presented in one section—at the end of the book—which makes it easy to use. Another interesting and valuable section is the appendix which contains an excellent discussion of equipment. It presents a good basis for the development of the minimum requirements for proper and safe endoscopy.

No reference library is adequate without this book. It is the most complete covering of time-tested advances in bronchoesophagology and related fields, such as roentgenology and thoracic surgery, available today.—*B. M. Merkel, M.D.*

THE BASIC NEUROSIS: ORAL REGRESSION AND PSYCHIC MASOCHISM, by *Edmund Bergler*, M.D. (Grune and Stratton, Inc., New York, \$5.00).

This is the most recent of several psychiatric books by a well-known author. The author is a practicing psychoanalyst and the book is primarily an attempt to outline his own concept of the basis of neurosis gained through over 20 years of analytic experience. He presents in detail his ideas concerning the role of oral regression arising with the development of psychic masochism. The discussion, the case material and the clinical observations are interesting but would have most significance for the practicing psychoanalyst. The book, at times, is wordy and even repetitious. Much case material is included in considerable detail. The author may be guilty at times of being too positive in his beliefs concerning debatable material. The book, however, is interesting and is recommended particularly to the psychoanalyst.—*P. T. Cash, M.D.*

DIAGNOSIS OF PANCREATIC DISEASE, by *Louis Bauman*, M.D. (J. B. Lippincott Co., Philadelphia, \$5.00).

This short work presents the author's experience with three tests of prime importance in the diagnosis of pancreatic disease. These are: (1.) analysis of pancreatic secretion by direct duodenal intubation; (2.) the elementary fat absorption study and (3.) the determination of serum amylase. The first test was found to be valuable in the diagnosis of chronic pancreatitis and also in the differentiation of carcinomas of the head of the pancreas from those of the common bile duct. The second test was found of value in estimating pancreatic function in those in which duodenal contents could not be obtained. The determination of serum amylase and its value in the diagnosing of pancreatic disorders is also thoroughly discussed.

The book is well organized and has numerous tables summarizing the data obtained by the author in the employment of these tests. This monograph will be of greatest interest to the internist and specialist in gastrointestinal disorders.—P. Englund, M.D.

THE EXCEPTIONAL CHILD IN INFANCY AND EARLY CHILDHOOD, published by the Woods Schools, Langhorne, Pa., no charge.

This is a 45 page booklet published from the 1950 spring conference on Education and the Exceptional Child from the Woods School, which is a private school for exceptional children.

First, it should be understood that by the term "exceptional" is meant the handicapped or mentally defective child. The booklet is composed of several related discussions by well qualified authors, the most widely known of whom is Dr. Randolph K. Byers, who discusses "The Early Recognition of Development of Handicaps."

Some of the topics covered include: "Principles for the Guidance of Exceptional Children," "Play as a Learning Process," "The Development of Oral Language in Children" and "The Eating Patterns of Normal and Exceptional Children."

All in all there is much useful information contained in this booklet for any one who deals with handicapped children.—R. J. Byrum, M.D.

PLASTIC AND RECONSTRUCTIVE SURGERY, by Ferris Smith, M.D., (W. B. Saunders Co., Philadelphia, \$15.00).

This excellent book is based upon *The Military Manual of Plastic and Reconstructive Surgery* by the same author. The latter is a standard reference book which was available in all Army hospital libraries during the late war. From personal use of this manual, I found it to be invaluable in helping to solve many perplexing problems encountered in military surgery.

The present book has been considerably amplified. The series of black and white photographs and drawings illustrating each case are excellent, and many case histories enhance the value of the text. I recommend this book for reliability, readability and for its intrinsic worth, embodying the experience of one of this country's outstanding plastic surgeons.—J. M. Bruner, M.D.

RECENT ADVANCES IN NUTRITION with particular reference to protein metabolism, by Paul R. Cannon, M.D. (University of Kansas Press, Lawrence, Kan., \$2.00).

This little monograph represents three lectures given at the University of Kansas. They concern primarily protein metabolism. The essentials of a normal diet from the standpoint of its protein and vitamin content are pointed out. The experimental evidences supporting the author's conclusions are given. Any one interested in the problems of nutrition will find this book interesting.—E. T. Scales, M.D.

METHODS IN MEDICINE, by George R. Herrmann, M.D. (The C. V. Mosby Co., St. Louis, \$7.50).

This book is the up-to-date revision of a work originally written by the late Dr. George Dock and is dedicated to him. As the author states, it "has been plan-

ned as a practical ward or bedside guide for the clinical investigation of the common and some of the more rare conditions."

In general the book offers much of value to the hospital intern or resident, but in the reviewer's opinion it suffers from its attempts to be too all inclusive. This is especially true of the section on "Clinical Laboratory Methods" where considerable time and effort are spent in detailing the methods of many of the procedures used in clinical chemistry. It is doubtful if these procedures could be correctly performed by those untrained and unaware of the numerous pitfalls of many of the laboratory procedures.

Of special merit is the section on "Methods of Clinical Investigation" in which details concerning history, physical examination and laboratory tests are outlined with reference to particular organ system involvement such as hematological and gastro-intestinal.—W. Rindskopf, M.D.

THE 1950 YEAR BOOK OF OBSTETRICS AND GYNECOLOGY (August, 1949-July, 1950), edited by J. P. Greenhill, M.D. (The Year Book Publishers, Inc., Chicago, \$5.00).

This book is an excellent review of the literature for the year, August, 1949-July, 1950 in the fields of obstetrics and gynecology. It would no doubt, be a valuable volume for the busy practitioner because of the short, concise and accurate synopsis of each article with comments by the editor. It would be excellent for the specialist as a rapid reference book and a good review of the recent literature in his field.—J. H. LaTona, M.D.

LIGHT THERAPY, by Richard Kovacs, M.D. (Charles C Thomas Publishing Co., Springfield, Ill., \$2.25).

Following a brief history of light therapy, this monograph concerns itself with the physics of radiant energy and discusses in order the infrared, luminous and ultraviolet radiations.

For those who find this department of physical medicine a useful adjunct in their practice, this book will help provide an understanding of the physical and physiological aspects of light therapy.—C. L. Burr, M.D.

CRITICAL STUDIES IN NEUROLOGY, by F. M. R. Walshe, M. D. (The Williams and Wilkins Co., Baltimore, \$4.50)

This small volume is a collection of papers published by the author from 1942 through 1947. Five of the six chapters each deal with a specific problem in basic neuroanatomy and neuro-physiology from the viewpoint of the clinical neurologist. Each one of these chapters represents a critical study. The knowledge and vast experience of the author is quite evident in each of the five studies. The last chapter is a philosophical treatment of a problem that is as important in medicine as in any other branch of science. It is the problem of integrating and coordinating into higher information all the varied bits of knowledge supplied by various sources. He emphasizes the need for imagination, ideas and generalization, but at the same time warns against pseudo-integration; "This is exemplified in the numerous doctrines of those who see their own speciality everywhere in medicine." This is an important contribution by an outstanding neurologist and is highly recommended.—P. T. Cash, M. D.

SOCIETY PROCEEDINGS

MEETINGS

Cerro Gordo

Dr. William D. Paul, Iowa City, spoke on "Prevention and Care of Football Injuries" at the April 10 complimentary dinner meeting of the Cerro Gordo County Medical Society at the Hotel Hanford in Mason City.

Clayton

Dr. Albert C. Mueller, Monona, was recently elected president of the Clayton County Medical Society. Other newly elected officers include: vice-president, Dr. Theodore W. Lichter, Edgewood and secretary-treasurer, Dr. Adrian R. Powell, Elkader. At the March 30 meeting it was decided that Clayton County would join the Fayette and Buchanan County Medical Societies in holding monthly meetings.

Clayton, Buchanan and Fayette

Members of the Clayton, Buchanan and Fayette County Medical Societies held a joint meeting May 8 at the Airport Inn in Elkader. Dr. Donald C. Conzett, Dubuque, described the structure and functions of the State Society to the group. Dr. Robert J. McNamara, Dubuque, discussed the "Causes of Hematuria."

Clinton

Dr. James Stack, Chicago orthopedic surgeon, spoke on "Modern Concepts of Low Back Pain and Sciatica" at a recent meeting of the Clinton County Medical Society.

Humboldt

The Humboldt County Medical Society and the County Public Health Council held a joint dinner meeting at the Coffee Shop in Humboldt April 16. Dr. Madelene Donnelley, State Director of Maternal Hygiene and Child Welfare of the State Department of Health was the guest speaker.

Johnson

Dr. Milton Helpert, Assistant Medical Exam-

iner of New York City, spoke on "Sudden, Suspicious and Violent Death" at the May 9 meeting of the Johnson County Medical Society in Iowa City.

Washington

Dr. John W. Dulin, Iowa City, spoke on "Surgical Emergencies" at the April 19 meeting of the Washington County Medical Society.

PERSONALS

Dr. Gerald V. Caughlan, Council Bluffs, was elected president of the Iowa Clinical Surgical Society at the society's meeting held recently in Burlington.

Dr. Paul Guggenheim, formerly of Westwood Village, Calif., has joined the Cogley Clinic staff in Council Bluffs. Dr. Guggenheim will specialize in the treatment of ear, nose, throat and related diseases. A 1940 graduate of the Washington University School of Medicine, St. Louis, Mo., he served his internship at the Los Angeles County Hospital.

Dr. John F. Koester has recently begun the practice of medicine in Davenport. A 1942 graduate of the SUI College of Medicine, Dr. Koester served his internship at the Kings County Hospital, Brooklyn, N. Y.

DEATH NOTICES

Dr. Fred A. Bowman, 79, who had practiced medicine for more than 50 years, died April 12 at his home near Leon. He had been in active practice until a few weeks ago when he became ill. Dr. Bowman was graduated from the University of Louisville School of Medicine, Louisville, Ky., in 1894. Dr. Bowman was a life member of the Decatur County and Iowa State Medical Societies.

Dr. Bush Houston, 66, practicing physician in Nevada for more than 30 years, died in an International Falls, Minn. hospital April 22, while convalescing from a trip to the Mayo Clinic in Rochester, Minn. Dr. Houston was graduated from the State University of Iowa College of Medicine in 1908. Dr. Houston was a member of the Story County and Iowa State Medical Societies.

Dr. Frank J. Kriebs, 91, one of Iowa's oldest practicing physicians, died April 19 following a heart attack at a Dubuque hospital. Born in Guttenberg, Dr. Kriebs was graduated from the Rush Medical College, Chicago, in 1881 and had practiced in the Elkport community for 66 years. Dr. Kriebs was a life member of the Clayton County and Iowa State Medical Societies.

Dr. Eppie S. McCrea, 83, retired Eddyville physician and surgeon, died April 25 in Eddyville after an extended period of ill health. Born in Eddyville, Dr. McCrea was graduated from the Barnes Medical College, St. Louis, Mo. in 1904. Dr. McCrea was a life member of the Wapello County and Iowa State Medical Societies.

ROSTER OF IOWA PHYSICIANS IN MILITARY SERVICE

As of May 15, 1951

Ackerman, J. H., Clarksville
(Hot Springs, Ark.).....U.S.P.H.S.
Alberts, M. E., Des Moines
(Des Moines).....Lt. (jg), U.S.N.R.
Ashby, J. D., Davenport
(Battle Creek, Mich.).....Major, A.U.S.
Bartholomew, R. D., Lake City
(Oakland, Calif.).....U.S.N.R.
Bartley, R. L., Sully
(Pensacola, Fla.).....U.S.N.R.
Benge, D. K., Dows
Camp, J. R., Thompson
(San Diego, Calif.).....Lt. (j.g.), U.S.N.R.
Carroll, T. J., Sibley
Carson, R. W., Winterset
(APO San Francisco, Calif.).....1st Lt., A.U.S.
Coyne, K. M., Burlington
(FPO San Francisco, Calif.).....Cmdr., U.S.N.R.
Dalager, R. D., Ottumwa
(Junction City, Kan.).....A.U.S.
Davidson, M. C.
(APO New York, N. Y.).....Lt. Col., A.U.S.
Fitch, R. E., Des Moines
(Des Moines).....1st Lt., U.S.A.F.
From, Paul, Des Moines
(Lackland Field, Texas).....1st Lt., A.U.S.
Goenne, W. C., Jr., Davenport
(Tacoma, Wash.).....Major, A.U.S.
Jensen, K. V., Newton
(San Antonio, Texas).....1st Lt., U.S.A.F.
Johnson, F. N., Madrid
(San Antonio, Texas).....1st Lt., A.U.S.
Johnson, M. H., Iowa City
(Tacoma, Wash.).....Capt., A.U.S.
Keil, P. G., Des Moines
(Des Moines).....Major, A.N.G.
King, R. E., Des Moines
(Camp Polk, La.).....Capt., A.U.S.
Krause, R. E., Ottumwa
Kurth, R. J., Waterloo.....A.U.S.
Landis, S. N., Des Moines
(Olathe, Kan.).....Major, U.S.A.F.
Leiter, E. R. K., Des Moines (Bangor, Me.)....A.N.G.
McCrary, W. A., Lake City
(Fort Riley, Kan.).....1st Lt., A.U.S.
Mangan, J. T., Forest City (FPO San Francisco, Calif.)
Marquis, F. M., Waterloo.....A.U.S.
Merkel, B. M., Des Moines (Bangor, Me.)..Col. A.N.G.
Mitchell, R. C., Iowa City
(San Antonio, Texas).....1st Lt., A.U.S.
Montgomery, A. E., Jefferson
(APO San Francisco, Calif.).....Lt. Col., A.U.S.

Mulder, L., Sioux Center
(Sioux Falls, S. D.).....Capt., U.S.A.F.
Nordin, C. A., Des Moines
(Lackland Field, Texas).....U.S.A.F.
Odell, J. E., Iowa City (Westlaco, Texas).....
Piburn, M. F., Preston.....1st Lt., A.U.S.
Robb, W. J., Cedar Rapids
(San Diego, Calif.).....U.S.N.R.
Ruble, R. L., Nevada (Camp Chaffee, Ark.)....A.U.S.
Schultz, M. H., Waterloo
(Weaver, S. D.).....Capt., U.S.A.F.
Simonsen, M. H., Sioux City
(Oakland, Calif.).....Lt., U.S.N.
Smith, C. B., Iowa City
(Fort Jackson, S. C.).....Capt., A.U.S.
Storck, R. D., Dubuque
(San Francisco, Calif.).....Lt.
Stutsman, R. E., Washington
(San Diego, Calif.).....Cmdr., U.S.N.
Taylor, H. N., Iowa City
Tempel, P. F., Steamboat Rock
(Fort Riley, Kan.).....A.U.S.
Thomas, J. H., Sibley (Austin, Texas).....U.S.A.F.
Tice, W. K., Iowa City
(APO San Francisco, Calif.).....A.U.S.
Tyler, D. E., Shenandoah
von Lackum, L. F., Oelwein
(FPO San Francisco, Calif.).....Lt. (jg), U.S.N.R.
Walz, D. V., Le Mars (Weaver, S. D.)..1st Lt., U.S.A.F.
Waldmann, W. B., Council Bluffs
Wehrmacher, W. H., Iowa City
(Oceanside, Calif.).....U.S.N.R.
Wheeler, R. A., Des Moines
(Fort Sheridan, Ill.).....1st Lt., A.U.S.
*Wilkins, D. S., Iowa City
(APO San Francisco, Calif.).....Capt., A.U.S.
Woolfolk, J. H., II, Waterloo
(Weaver, S. D.).....U.S.A.F.
Zeilenga, R. H., Orange City.....1st Lt., U.S.A.F.

* Deceased.

STATE DEPARTMENT OF HEALTH

(Continued from page 240)

cases were reported from 53 counties. Of the cases confirmed by laboratory diagnosis there were 66 dogs, 35 cattle, 22 skunks, six hogs, five cats, five foxes, two sheep and one horse, for a total of 142. This is almost three times as many as the 51 cases reported during the same period last year.

A rabies control program in Webster County is currently in progress. The County Board of Health (County Superintendent of Schools, County Auditor and Chairman of the County Board of Supervisors) and the County Health Officer, who is appointed by the Board, took the lead and, in cooperation with the city, town and township officials initiated a control program. It consisted primarily of three parts: (1) Elimination of all stray, ownerless and unlicensed dogs; (2) Anti-rabies vaccination of all dogs and (3) Quarantine of all dogs for 80 days. The quarantine on unvaccinated dogs has been continued indefinitely. Since this control program went into effect, there has been a marked reduction in the number of rabies cases reported.

Many smaller communities in the state also have established rabies control programs. To be most effective, however, the control program should be on a county-wide basis. Rabid animals respect no boundary lines and may travel over wide areas.

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No. 7

SHORTCOMINGS IN PUERPERAL CARE*

NORMAN F. MILLER, M.D.**

ANN ARBOR, MICH.

THE present low maternal mortality rate in the United States points to progress which has been made in obstetrics. Not all progress, however, is measured in terms of death rates. Morbidity and a shortened period of incapacity are likewise significant. The high interest in pain relief during labor is ample proof that just plain comfort may also be highly valued as a measuring stick in determining the quality of obstetrical care. Because this is so I should like to call your attention to a few weak spots in the management of the puerperal patient. Since most births occur in hospitals my remarks will chiefly apply to hospitalized puerperal women. I acknowledge, even though briefly, improvement in puerperal care. Blood replacement, the use of antibiotics and early ambulation are noteworthy examples. It would be interesting to discuss these good things about puerperal care, but, it is even more important that we consider some of the faults. There are in my opinion two good reasons why we should give careful consideration to the shortcomings of postpartum care. Briefly stated these are: (1) In general, the quality of postpartum care is unsatisfactory and (2) it has taken over a quarter century to achieve widespread acceptance for hospital deliveries. This is an advance which must be held. Yet, there are some things about contemporary postpartum care which, if permitted to continue, may seriously jeopardize continued hospitalization of obstetrical patients.

Any of the points to be discussed could well serve as a springboard for detailed comment during informal gatherings of physicians concerned with obstetrics.

So that there will be no misunderstanding I should like to divide the postpartum period into

three parts, the *immediate*, or the first 24 hours, the *intermediate*, from the end of the first 24 hours through the eighth to the tenth day, the approximate period of hospitalization and, the *late* postpartum period, extending from the tenth day until involution of the generative organs is complete and satisfactory rehabilitation of the patient has been accomplished.

While standards for acceptable postpartum care may be subject to considerable variation, I doubt that it has yet reached a completely acceptable quality. Critical inspection of hospitalized patients offers the best opportunity for observation of shortcomings but, we may also find evidence in some of our leading books on obstetrics. Thus, in one of the more recent and, indeed, one of the best of our contemporary texts of approximately 1,100 pages only five are devoted to actual care of the puerperal patient. Since texts commonly reflect contemporary thinking and serve to shape student opinion, we may have here one reason for the apparent neglect of this subject.

Concern over the patient's condition quickly dwindles with the birth of the child. This is partly understandable. The puerperium comes along as much of an anticlimax. Concern over what may have been a complicated pregnancy has ended; apprehension regarding labor is over; fatigue and the need for rest for both patient and physician, now takes hold. Yet, it is during this early phase of the puerperium that some of the more serious accidents occur. It is here that we see the first real weakness in postpartum care. Without going into detail it should be emphatically stated that every immediate postpartum patient is entitled to "recovery room" type of care. Intravenous ergotrate, a shot of penicillin and casual observation are not substitutes for close scrutiny by trained personnel. No immediate postpartum patient should be returned to her own room until her pulse is below 100, her blood pressure normal, blood loss adequately replaced and all bleeding controlled. Doubtless regulations to this effect are to be found in many hospitals but their execution is another matter. Recovery room care means something more than placing the patient within four walls and a ceiling. It means trained personnel—which may

* This material was originally presented before the New England Obstetrical and Gynecological Society, Boston, Mass., November, 1950. Presented at the One Hundredth Meeting, Iowa State Medical Society, Sioux City, April 23-25, 1951.

** From the Department of Obstetrics and Gynecology, University of Michigan Hospital, Ann Arbor, Mich.

well be the accoucheur himself. Indeed good recovery room type of care can be given in any room such as the delivery room or labor room, or whatever is available. The important feature, however, is the care, not the room. This should equal in every respect, the care given postoperative patients. Much more can, and doubtless will be said regarding this subject, but for brevity sake I shall not belabor the matter further at this time.

Good postpartum care must give some thought to rehabilitation of the patient. It is not enough merely to check on involution of the uterus and the condition of the cervix. Functional restoration is even more important. There are several angles to this but I shall mention only two. While obvious defects in healing, tender scars, hemorrhoids and other complications are often tended to, functional restoration is neglected. There may be a good deal of talk about the musculature of the generative tract during pregnancy and labor. In prenatal classes pregnant women are frequently told about this or given movie demonstrations showing how these muscles work. Yet, we ignore or forget to tell the puerperal patient about muscle function during her period of rehabilitation. Mere healing of the vaginal mucosa does not imply an intact underlying muscle. Yet, the functional restoration of the commonly over-stretched vagina and pelvic floor may play an important part in the future health of the patient. No one can say that cystocele, rectocele and uterine prolapse will be prevented by proper puerperal care. But, exercise of these muscles, whether it be in the form of tensing, use of the perineometer or the frequently talked about but seldom used postpartum exercises, will definitely lessen the likelihood of the various kinds of organ decensus. Furthermore, such exercises, if properly explained to and used by the patient will not only reduce tenderness in the vagina and perineum but, will also minimize stress incontinence later in life. I have said nothing new regarding functional restoration of the generative tract. These are well known facts. Yet, few physicians make the effort or take the time to explain the value of puerperal exercise to their patients.

Marital happiness is based on many things not least of which is sexual harmony. Yet sexual discord often begins following birth of the first child. While money matters, fatigue and innumerable other factors contribute to marital rifts, none is more important than puerperal dyspareunia. Inquiry into the sex life of parous women reveals puerperal dyspareunia to be a common complaint. This may be due to a painful episiotomy scar, a perineum which has been excessively tightened, or to chronic fatigue as from a sleepless week in the hospital. Whatever the cause, and there are many, puerperal dyspareunia is by no means rare. The most important thing about all of this to us as physicians, however, is that much of this trouble can be avoided or corrected. Unfortunately little attempt is made to do so. The average husband and wife are not sufficiently familiar with this prob-

lem to work out a satisfactory solution by themselves. Consequently emotional tension develops, sometimes even to the breaking point. The fact that well over 50 per cent of psychotic upsets associated with pregnancy occur during the puerperium attests to the unrest occurring at this time. Given a properly instructed, understanding husband, most women easily hurdle the common problems of marital readjustment following childbirth. A careful unhurried explanation to both husband and wife, concerning the resumption of marital relationship is a matter of considerable importance. This is not always a simple matter for there are conflicts to be reconciled. Having just recovered from childbirth the wife is not likely to be either physically or emotionally prepared for sexual union. On the other hand the husband, whose biologic urge has been subjected to prolonged restraint, presents a positive force. Both of these forces—the positive and the negative—require understanding—even medical alchemy—for their resolution. When both husband and wife have been properly informed their mutual understanding and consideration—one for the other—leads to happier and smoother marital sailing than customarily occurs. In this brief comment on one of the most important aspects of postpartum care I may have given the impression that puerperal dyspareunia is a simple matter. It is not. The wise physician will discuss these matters with his patient and her husband during pregnancy. By so doing he frequently makes later instruction and marital readjustment an easier problem.

Generally speaking, the thing most desired by the newly puerperal woman is rest. Indeed, unless there have been complications this is likely to be her greatest need. Yet what does she get? She may obtain a good night's rest with the many benefits resulting from refreshing sleep, but then again she may not. Frequently those who cannot afford a private room—and they are in the majority—are returned to a ward or semi-private area where others are in the process of rising. Sleep and rest therefore, even with the aid of sedation, is brief and fitful. There is no prolonged refreshing slumber, nor is there likely to be, for whether the patient is in a ward or private room, her presence in a hospital today appears to be a matter of secondary importance. Secondary to obsolete but fixed hospital routine, secondary to the schedules of ward helpers, orderlies, nurses and doctors. At some absurd hour she is awakened. The technic used for this cruel procedure will, of course, vary. It may be a thermometer inserted into her mouth, a pitcher of ice water placed on her table or instructions to get washed and ready for breakfast, which commonly arrives an hour or two later. Any attempt to snatch a brief rest during the remainder of the day is likely to be interrupted by the vips, very important people such as her baby, the cleaning woman, the nurse, the doctor and others. I do not mean to be facetious in thus commenting upon the difficulty of obtaining rest in a hospital. I seriously

believe this has become one of the most important and not too well recognized bugaboos of hospital life. I believe it is an important factor in contributing to the emotional upset and tears so frequently noted amongst puerperal women. Too often it marks the beginning of the well recognized fatigue syndrome so commonly observed in new mothers.

Most young mothers are basically healthy. They generally do not need or want, all the traditional hospital routine which is literally forced down their throats. Who can gainsay they would not do better during the intermediate puerperal stage, in a modern hotel room where service is good, but given only when asked for? Certainly, in many homes the recovery period has few of the undesirable features mentioned above and does offer some advantages. In homes where help is available, everything is geared to the mother's needs and comfort. I am not implying that home care is best but, I am trying to make clear that it is high time hospital administrators and we as physicians demonstrate the necessary imagination and initiative to bring about alteration in hospital routine sufficient to make puerperal women feel their stay was worthwhile. I include hospital administrators because I feel it important they too, recognize these shortcomings.

Upon discharge from the hospital, the patient and her husband are made recipients of a bill for hospital care. While this should have been anticipated, it nonetheless comes as a surprise, since it invariably amounts to more than was expected. If the patient's husband is economically sound, or if the patient has insurance, the settling of her hospital financial obligation is no major problem. But, young people in these two financial categories are still in the minority. Consequently, for the average young women the cost of hospital care is a source of real concern. With high wages, high taxes, high food prices and, indeed with everything costing more and more, the rising cost of hospital care is neither surprising nor avoidable. Concern over expense, a disease to which none of us can claim immunity, serves to further undermine the tranquility of readjustment during the late puerperium. This often has a telling effect upon the future health of mother, father and child. The increasing cost of hospital care for obstetric patients is a serious matter, as indeed, it is for all patients. For the young woman whose husband has an average income, the cost has today reached the point where women in this category must once again consider the feasibility of home delivery. I stated earlier that it has taken a long time to bring women in labor from the home to the hospital and, I for one should not care to participate in a reversal of this trend. Hospitalization for delivery has proved its worth in safety and comforts for both mother and child. But to many patients hospitalization for a week or ten days following delivery is not worth

the cost. It must be apparent that rising hospital expense and continued disregard for the puerperal patient's needs and comfort might bring a return of home obstetrics which, though frequently adequate, can never provide safeguards comparable with hospital care. I believe this to be a matter deserving serious consideration.

While I do not pretend to know all the answers there appear to be several possible solutions to this problem. To reduce hospital cost and at the same time give the puerperal patient care and comfort would doubtless require abandonment of some nursing and hospital procedures and the revision of others. It might also necessitate much greater use of maid service in place of trained nurses. But unless we make the hospital stay for the puerperal patient worthwhile, through opportunity for rest and improved health for both mother and babe, the clamor for early discharge from the hospital will increase and, we shall not be able to justify either the stay or the expense. Ideally, puerperal hospitalization for the average healthy mother should be something to be remembered, a week or ten days of rest, good care, good food and comfort resulting in healthy and emotionally stable mothers. Unless real effort is made to approach this ideal puerperal hospitalization for the uncomplicated case will come to be recognized the delusion and sham it sometimes is.

Assuming these changes will come to pass, puerperal hospitalization will then offer no problem to those whose finances permit. This includes hospital insurance participants. For those with fixed, barely adequate income, however, even this necessary change will not be sufficient. For this latter group then, or for any patient for that matter, who finds her puerperal hospitalization either a financial burden or a nightmarish experience, there remains the very real and already proved possibility, of returning home 24 to 48 hours after the birth of her child, assuming, of course, that there are no serious complications or contraindications. By developing and improving puerperal home care either as an extension of public health nursing or as an offshoot of hospital obstetrical care, such patients may continue to receive good attention at the time of delivery and afterwards at reasonable cost.

No mention has been made of professional charges since it is presumed that only those who have insurance or sufficient financial support contract directly with obstetricians and private physicians for obstetrical care.

In this brief consideration of postpartum care I have attempted to set forth some of the shortcomings which I believe deserve our unified attention. The many good things about puerperal care and the variability of quality have already been acknowledged.

THE INCIDENCE OF TOXOPLASMOSIS AMONG PREGNANT WOMEN IN IOWA

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Toxoplasma is a protozoan parasite of uncertain classification characterized by an affinity for many tissues, especially the central nervous system, by widespread geographic distribution and by a pathogenicity for a large variety of hosts notably rodents and birds.¹ Toxoplasma was first recognized as a new genus in 1909 by Nicolle and Manceaux² of France and in the same year by Splendore³ of Brazil. Not until many years later was the organism extensively studied. Sabin and Olitsky⁴ accidentally isolated toxoplasma in conjunction with some virus work and established its identity in accordance with Aragao's⁵ criteria for the classification of protozoa. The organism was isolated from the brain of a guinea pig and was proved pathogenic for this animal, as well as pigs, rabbits, mice, monkeys and chickens. Sabin⁶ has suggested that the same protozoan probably operates in all susceptible mammals, a factor which is important in epidemiology. The first definite evidence of human infection was presented by Wolf et al⁷ when they transmitted the infection from a child to a laboratory animal. The first proved adult case was reported by Weinman et al⁸ in 1940.

MORPHOLOGY

The morphologic characteristics together with an excellent differentiation from other protozoa have been described well by many authors.^{8, 9, 10, 11, 12} In the fresh state or in Giemsa stained films, toxoplasma is 4 μ to 7 μ in length and 2 μ to 4 μ in width, but is about half this size in fixed tissues. It divides by binary fission. A recently divided organism is crescentic in shape, whereas prior to fission it is round or oval. There is no nuclear membrane.

The nuclear chromatin is strongly positive for thymonucleic acid by the Feulgen test and constitutes one third of the organism. In preparations stained with hematoxylin and eosin the cytoplasm is pink and the chromatin is dark blue. Toxoplasma is gram negative and is an obligate intracellular parasite. It has a broad affinity for tissues and for a variety of mammals. The organisms lose virulence on being maintained at 50° C. for 15 minutes or at 37° C. for four days or after freezing with carbon dioxide and thawing.

THE DISEASE IN MAN

The disease appears in three main forms in man. As a congenital disease it is characterized by the "toxoplasma tetrad"¹³ of hydrocephalus, chorioretinitis,

cerebral calcifications and convulsions. Typically chorioretinitis is composed of large, bilateral and frequently multiple lesions in the macular area. Occasionally jaundice, hepatosplenomegaly, interstitial pneumonitis, anemia and leukopenia, vomiting and diarrhea and myocarditis may be encountered in this form of the disease.¹⁴

The childhood disease is characterized by an acute non-suppurative encephalitis. Lumbar puncture shows xanthochromia, round cell pleocytosis, and increased protein.¹⁴

The adult disease may exist in clinical, subclinical or latent varieties. The former is manifested by fever, papular eruption and primary atypical pneumonia. The latter can only be diagnosed by various immunologic tests to be described subsequently.³⁸

DIAGNOSIS

The diagnosis is made on the basis of the clinical picture plus use of one or more of the following procedures:

1. Demonstration in pathologic material or by animal passage
2. Demonstration of:
 - a. Neutralizing antibodies
 - b. Complement fixing antibodies
 - c. Positive reaction to the methylene blue dye reduction test
 - d. Positive reaction to the skin test
3. Lumbar puncture
4. X-ray demonstration of intracerebral calcification and internal hydrocephalus.

EPIDEMIOLOGY

The epidemiology of the disease is not as yet established but Sabin feels that there must be an extensive animal reservoir.¹⁵ The fact that there is a striking resemblance to rickettsial disease and that there has been a history of tick bite in several adult cases, suggests an insect vector.⁷ The occurrence of pneumonitis in adult infections has suggested droplet transmission. The route of congenital transmission is not definitely known but it is well established that the infection develops in utero. The finding of neutralizing antibodies in the mothers of infants with toxoplasmosis gives credence to this point of view.¹⁶

Much experimental work has been done in an effort to establish the portal of entry. Cowen and Wolf^{17, 18, 19} showed that it was possible to give toxoplasmosis to mice using the vagina as a portal of entry.

Infection was two to three times more common in pregnant as compared to non-pregnant mice. Nearly 100 per cent of those exposed in the mid-third of pregnancy contracted the disease. Lesions developed in the placenta as well as in other tissues. The fetuses apparently contracted a blood stream infection. It is interesting to note that if the organism was introduced to the gravid mouse after the ninth day of gestation, normal offsprings were delivered. Experiments on guinea pigs suggested blood-borne rather than a vaginal tract

source of congenital infections. The excreta of rabbits and guinea pigs were found to be infectious but mice fed toxoplasma failed to become ill.

Therapy

Various modes of therapy have been tried. Animal and in vitro experiments have been more successful than actual clinical trials. In general, sulfa compounds seemed to have some beneficial effect.^{10, 20, 21, 22, 23} Compounds of acridine, antimony, arsenic and quinine were all ineffective.^{22, 23} Penicillin, streptomycin, chloromycetin, aureomycin, subtilin, polymixin-B, chloroguanide hydrochloride (paludrine), bacitracin, para-aminosalicylic acid, nicotinic acid and nitrofurazone (furacin) were also useless.^{10, 24}

Immunology

Although Sabin and Olitsky⁴ reported neutralizing antibodies in the monkey in their original communication on toxoplasma, they did not report them in humans until 1941.²⁴ Since that time four reliable diagnostic procedures have been added to the armamentarium of the physician. This work was made easier when cross immunity tests with a number of human strains and one of guinea pig origin showed that all strains were immunologically identical.²⁵ The neutralizing antibody test was developed by Sabin in 1942. Because this test had two main disadvantages in that the virulent organism had to be maintained by constant animal passage and that the results of the test were delayed for one week, Warren and Sabin²⁷ developed a complement fixation test in 1942. An improvement in technic was reported in 1948.²⁸ Through ultra-centrifugation of the chorio-allantoic grown antigen Sabin²⁹ was able to remove the component which had caused fixation in some non-infested sera. The details for the preparation of the antigen, which Sabin feels is the one of choice for complement fixation (C-F) tests, are outlined in a recent volume of *Pediatrics*.²⁹ The alkaline methylene blue test was outlined by Sabin in 1948. When alkaline methylene blue was added on a slide to a drop of peritoneal exudate containing toxoplasma in normal serum, the organisms stained deeply; in immune serum, the cytoplasm

Table 1

No. of Cases	No. of Positive Reactions	Per Cent With Positive Reactions
152	8	5.26
Range in Age.....15-42 yrs.		
Average of Group Tested.....23.5 yrs.		

of extracellular toxoplasma was unstained.³⁰ Frenkel³¹ reported a skin test for toxoplasmosis in 1948. This test correlated well with the serologic tests,³² but its greatest use is found in surveying populations to discover the incidence of latent infection.

Further investigation of toxoplasma antibodies in infected children, their mothers and subsequent

normal siblings indicated that the absence of C-F antibody during the first six weeks of life from the serum of a child with a high titer of neutralizing antibody and whose mother has an elevated titer of both C-F and neutralizing antibodies should suggest active toxoplasmosis.³³ It has also been shown that C-F antibody can persist for at least six years and sometimes longer in people with either clinically recognizable or unrecognizable toxoplasmosis. Also, the antibody can persist in

Table 2

Patient	Neutralizing Antibodies	Complement Fixation	Skin Test	Dye Reduction
Mrs. K.T.	1:100	1:8	4 plus	Negative
Mrs. M.F.	1:100	1:64	2 plus	Positive
Mrs. C.P.	1:100	1:8	1 plus	Negative
Mrs. L.L.	1:10,000	Not done	Not done	Not done
Mrs. E.F.	1:1,000	1:8	1 plus	Negative
Mrs. I.M.	1:20	1:32	2 plus	Positive
Mrs. F.S.	Negative	1:8	2 plus	Negative
Mrs. A.T.	1:20	Not done	Not done	Not done
Infant of Mrs. A.T.	1:20	Not done	Not done	Not done

individuals in whom the infection has been eliminated or sufficiently suppressed to prevent clinical transmission. A positive C-F titer may be indicative of a recent infection or of a recent contact with antigen. The C-F test may be positive as early as the first week of infection, at a time when the neutralization test is still equivocal.³⁰

Methods of Survey

Inasmuch as Sabin's animal experimentation had shown toxoplasmosis to be endemic in many rodents, it seemed wise to conduct a series of surveys in order to determine the incidence of latent infection in the adult population. Many such surveys have been made. Callahan³⁴ put the incidence at 2.7 per cent in the St. Louis area, using the neutralizing antibody test. Heidelman³⁵ reported 10 per cent incidence among a group of 58 "normal persons" of unspecified age in the Baltimore area, again using the rabbit test. Frenkel³¹ reported a 10 per cent incidence in a group of 50 young adults in the San Francisco area. MacDonald³⁶ reported a five per cent incidence in normal adults in Northwest England using the complement fixation test. Feldman and Sabin reiterated their original estimate of a 10 per cent incidence in a more recent article and felt that Callahan's low figure was due to an improper modification of the rabbit test. (Callahan used 0.02 cc. instead of the recommended 0.2 cc. of antigen.)

On the maternity service at the State University of Iowa we have a unique opportunity to conduct fairly reasonable geographic surveys of the state with little effort. Our patients are admitted to the antepartum ward in the thirty-eighth week of gestation in order to provide teaching material for medical students. The patients are indigent women who represent most of the counties of Iowa. During a short period in 1949 and 1950, 152 such patients were tested for toxoplasmosis using the skin test, the neutralizing antibody test, the complement fixation test and the methylene dye re-

hydramnios with an anencephalic fetus. Labor was induced by artificial rupture of the membranes and two liters of amniotic fluid were recovered at the time. After 22 and one-half hours of labor, the patient delivered a 2,300 gram stillborn anencephalic, female infant. Skull X-rays of the mother showed no evidence of cerebral calcification. Chest X-ray films revealed no signs of pneumonitis. Fundiscopic examination showed no chorio-retinitis. No post-mortem examination was done on this infant, and no blood was obtained for serologic reactions.

Case V. Mrs. E. F., hospital no. 49-11744, was a well nourished, well developed white 26 year old G 5 P 3, whose obstetric history included an early abortion in her second pregnancy, but was without other complications. Her past medical history and physical examination were within normal limits. She delivered a normal male infant after an induced labor of 23 hours duration.

Case VI. Mrs. I. M., hospital no. 41-5639, was an obese, 33 year old white G 6 P 5, whose past medical and obstetric histories were negative. Physical examination was within normal limits. She delivered a normal female infant after an induced labor of 15 hours.

Case VII. Mrs. F. S., hospital no. 50-1157, was a well nourished, well developed white 20 year old G 1 P 0, whose past medical history and physical examination were within normal limits. She delivered a normal female infant after an induced labor of six hours and 44 minutes.

Case VIII. Mrs. A. T., hospital no. 48-1567, was a well nourished, well developed, white, married woman, 25 years old, G 1, P 0. Her past medical history and her physical examination were within normal limits. X-ray examination of the patient's skull showed no cerebral calcification. Fundiscopic examination showed no chorio-retinitis. A chest film showed no pathology. After 25 hours and 54 minutes, the patient was delivered of a stillborn male hydrocephalic infant by breech extraction. A decompression of the hydrocephalus was carried out in order to effect delivery. Some 1,650 cc. of cerebrospinal fluid were removed. The cord blood of the infant was run for neutralizing antibodies and was found to be positive in a dilution of 1:20. A post-mortem examination was performed. There was a marked stenosis of the aqueduct of Sylvius sufficient to explain the hydrocephalus. Death was intrauterine and due to the decompression procedure carried out prior to delivery of the head. A recent review of the microscopic sections from tissues of this infant by Dr. John Carter, Department of Pathology, State University of Iowa Hospitals, showed no evidence of toxoplasmosis.

DISCUSSION

In our series of 152 cases, we have been able to demonstrate an incidence of subclinical toxoplasmosis of approximately five per cent. This represents about one half of Sabin's estimate of the general incidence of subclinical toxoplasmosis. It is in-

teresting to note that among the eight positively reacting mothers, two monsters and six normal children were delivered. In the cases in which neutralizing antibodies were demonstrated in the infant, they were present in the same titer as in the mother. This is in keeping with Sabin's³³ observation that both neutralizing and complement fixing antibodies are transmitted to normal (i.e., non-infected) children quantitatively. Since this child's hydrocephalus was due to a congenital stenosis and no toxoplasma could be demonstrated, pathologically this child will have to be considered "normal" in the sense in which Sabin meant it.

The importance of toxoplasmosis, from the obstetrical point of view, is difficult to estimate at this time. Gross congenital deformities as recorded upon death certificates afflict approximately one in every 213 live-born individuals. About 25 per cent of congenitally malformed persons are stillborn.³⁹ What per cent of these deformities can be attributed to congenital toxoplasmosis cannot even be estimated adequately, however, the following facts should be borne in mind:

1. Therapeutic measures are far from adequate, but since exact diagnosis is now possible, it is quite probable that progress in recognizing and treating this infestation will be rapid.
2. Material reductions in stillbirths and neonatal deaths have not been made recently but research in toxoplasmosis, its diagnosis and treatment, offers a definite avenue of approach to progress in improving prenatal and neonatal statistics.

SUMMARY AND CONCLUSIONS

1. A review of the literature on toxoplasma is recorded.
2. The results of a survey of 152 maternity patients show an incidence of 5.26 per cent.
3. The results of all four methods of testing correlate quite well. The neutralizing antibody test seems to be the most consistent indicator, although the skin test is a reliable method in this type of survey.
4. The skin test showed no deleterious effects when used on seven newborn infants.

ACKNOWLEDGMENTS

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CESAREAN SECTIONS IN IOWA IN 1949

MADELENE M. DONNELLY, M.D.*
DES MOINES

THE PROBLEM

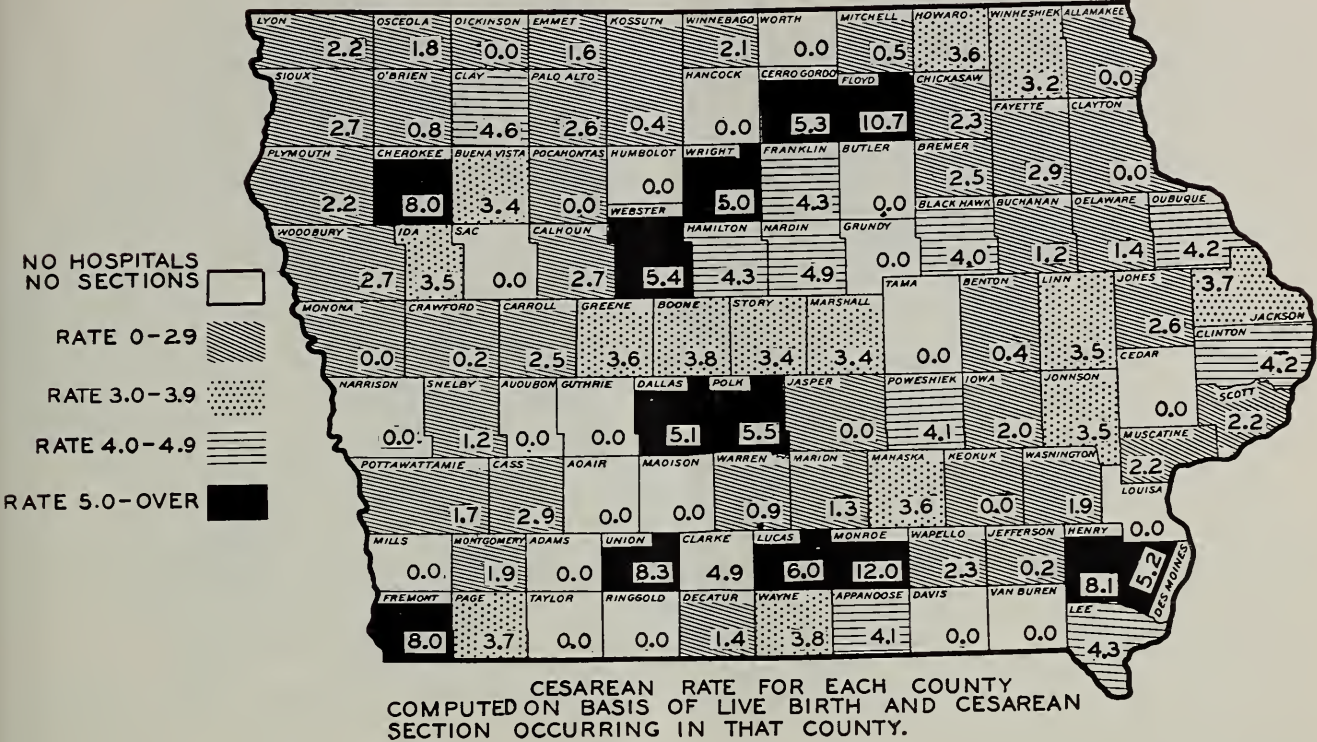
In 1935, E. D. Plass¹ published a study of cesarean sections done in Iowa during the years 1930, 1931 and 1932. The incidence of cesarean section in this period was one per cent of all live births. In 1948 the Division of Vital Statistics of the Iowa State Department of Health published a graph² depicting a steady rise of incidence from 1.2 per cent of all live births in 1936 to 3.5 per cent in 1948. This increase in percentage of births delivered by cesarean section is perhaps to be expected. Almost 95 per cent of the deliveries occur in hospitals today compared to less than 30 per cent in 1930. From a surgical standpoint more sections may be done safely with the improvement of technic and the use of antibiotics. On the other hand it is possible that in some instances had the rate of cesarean sections been higher, maternal and fetal mortality would have been less. It is not the purpose of this paper to say whether too few or too many cesarean sections are done, but rather it is prepared with the thought of assembling and pointing out facts to the physicians in the state.

A review of medical literature reveals numerous articles on this subject but few are comparable to a statewide study. The study by Dr. Plass was statewide in Iowa but was done in early years when approximately only 30 per cent of all deliveries occurred in hospitals. Keettel³ likewise made a study in Wisconsin for years 1930-1940, when only 30 to 60 per cent of all deliveries occurred in hospitals and found the incidence of cesarean sections to be 2.72 per cent. Later studies are more comparable in respect to hospital deliveries, newer technics and use of antibiotics and whole blood, but represent small samples of a community. McSweeney and Hassett⁴ report an interesting series from Boston City Hospital covering years 1936-1945 with an incidence for the ten year period of 3.3 per cent. There was a definite drop in incidence beginning in 1939 and lasting four years which they attribute to the use of x-ray pelvimetry.

Lull⁵ reports a citywide incidence of 2.5 per cent in Philadelphia in 1941, Ehrenberg⁶ an incidence of 2.5 per cent in Minneapolis in 1946, Mack and Siddall⁷ an incidence of 2.7 per cent in Detroit in 1945. There is some consistency in these various reports for the early forties. However, other sur-

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FIGURE 1
IOWA
INCIDENCE OF CESAREAN SECTION IN 1949 BY OCCURRENCE



veys done on a basis of hospital admissions show such a great variation that we do not feel that they are at all comparable.

MATERIAL USED IN STUDY

Information for this study was obtained from the Division of Vital Statistics, Iowa State Department of Health and from questionnaires filed by individual hospitals for license renewals. Numbers of sections quoted here vary from Vital Statistics reports in that we have considered sections performed on stillbirths and have only counted

Iowa, 2,172 of which were delivered by cesarean section. There were also 54 stillbirths delivered by section. This makes a total of 2,226 cesareans and an incidence of 3.5 per cent or 3.5 sections for every 100 live births.

The incidence was computed for each county on an occurrence basis and the counties fell into groups shown in map, Figure 1, and Table, Figure 2.

INCIDENCE BY RESIDENCE

Live births and cesarean sections were regrouped by residence of mothers. As 1,132 deliveries and 117 sections were done in Iowa on non-resident mothers, it gives us 61,765 live births and 2,109 cesarean sections to show in map, Figure 3 and Table, Figure 4.

INCIDENCE BY HOSPITALS

The incidence of cesarean sections as they occurred in hospitals of various sizes was studied and is shown in Figure 5. Osteopathic hospitals were included in these figures.

In the groups of hospitals up to 25 beds some individual hospitals had high incidence but numbers of deliveries were so small that rates were not significant. In the 26 to 50 bed group 10 hospitals had rates of 5.0 per cent or more, one hospital delivering 46.25 per cent of all babies by sections. In the larger hospitals 10 had rates over 5.0 per cent, three rates being 10.0, 8.2 and 9.2 per cent.

INCIDENCE BY OCCURRENCE

In 1949 there were 62,897 live births reported in

THE SURGEONS

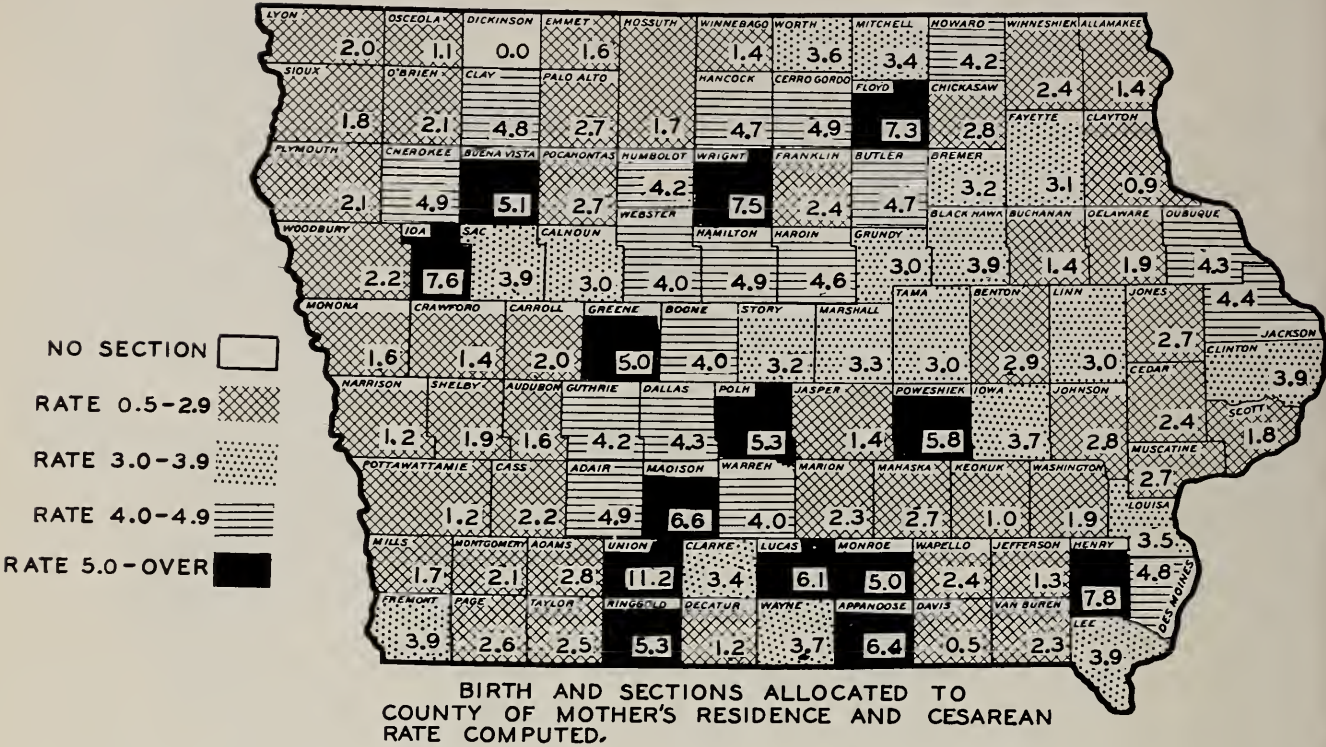
Of the 62,897 live births, 59,706 were delivered

FIGURE 2
Incidence of Sections by Occurrence

Groups of Counties	No.	No. live births by occurrence	% Total Births	No. Sections	% Total Births
Counties with no hospitals	20	1,329	2.11	0	0
Counties with section rates:					
0- 2.9%	41	24,728	39.31	468	21.02
3.0- 3.9%	14	11,349	18.04	403	18.09
4.0- 4.9%	11	11,210	17.82	479	21.50
5.0-12.0%	13	14,281	22.70	876	39.38
Total	99	62,897	99.98	2,226	99.98

one section for each multiple birth. In Vital Statistics where a card is punched for every birth and machine counted, it totals two sections for each pair of twins.

FIGURE 3
IOWA
INCIDENCE OF CESAREAN SECTION IN 1949 BY RESIDENCE



by doctors of medicine, 3,142 by doctors of osteopathy and 49 by nurse, parent, etc. Doctors of medicine performed 2,075 sections, incidence 3.47 per cent and doctors of osteopathy, 151, incidence 4.80 per cent.

FIGURE 4
Incidence of Sections by Residence

Groups of Counties	No.	No. live births to residents	% Total Births	No. Sections	% Total Births
Counties with section rates:					
0.00%	1	171	0.28	0	0.00
0.5- 2.9%	47	27,361	44.29	590	28.00
3.0- 3.9%	19	13,600	22.01	438	20.75
4.0- 4.9%	18	10,856	17.57	493	23.36
5.0-11.2%	14	9,777	15.82	588	27.86
Total	99	61,765	99.97	2,109	99.97

It is not possible to determine from the birth certificate exactly who did the sections as in known samples it was found that usually the family doctor signed the birth certificate even if he referred the surgery. Twelve per cent of doctors who signed certificates signed only one, 44 per cent signed two to six, 26 per cent signed seven to 15 and 17 per cent signed 16 to 31. Members of the American Board of Obstetrics and Gynecology signed seven per cent of the certificates, members of the American Board of Surgery signed 0.6 per cent and 30 per cent were signed by doctors designating in the American Medical Association directory that they give special attention to obstetrics and gynecology.

MATERNAL INFORMATION

Forty-seven per cent of all the sections were done on rural women, 14 per cent on women living in towns and 38 per cent on urban mothers. The rate of cesarean sections was slightly lower among the rural women (3.1 per cent) as compared to 3.8 per cent for town and 3.7 per cent for urban women.

As we would expect nearly all of the women were between the ages of 20 and 39. Fifty-four per cent were from 20 to 29, and 34 per cent were from 30 to 39. Among the rural women seven per

FIGURE 5
Incidence of Cesareans in Hospitals

No. Hospitals	No. Beds	No. Deliveries	% Total Hosp. Del.	No. S. C.	% Total Sections	S. C. Rate
12	10 and less	785	1.33	11	0.49	1.40
40	11- 25	6,948	11.81	196	8.80	2.82
36	26- 50	10,157	17.26	497	22.31	4.89
24	51-100	13,076	22.22	505	22.67	3.86
29	101 or over	27,856	47.35	1,011	45.44	3.62
		6*	0.01	6*	0.26	
141			99.98	2,226	99.97	

* Name of hospital was omitted on six cesarean birth records.

cent were over 40 and five per cent under 20. In the town group only three per cent were over 40 and eight per cent were under 20, and in the urban group five per cent were over 40 and six per cent were under 20.

Thirty-three per cent of all the mothers were having their first babies, 35 per cent were para-1,

17 per cent were para-2, 14 per cent were para-3 or more. The parity was not found to be different in the rural or urban mothers.

PRENATAL CARE

Little is actually known about prenatal care in the various studies. Lewis⁸ at Cook County and Bachman⁹ at University Clinic, Philadelphia, both note that their patients had adequate prenatal care. In the Wisconsin study Keettel felt one had to consider prenatal care adequate because 68.7 per cent visited the doctor in the first trimester. In this study 72 per cent of the mothers consulted the doctor in the first trimester, 20 per cent in the second trimester, five per cent in the third trimester, .02 per cent at the onset of labor and 1.5 per cent not stated. There was a considerable variation of the period in which the mother consulted the doctor in relationship to their residence. Seventy-seven per cent of the mothers living in cities of 10,000 or over consulted the doctor in the first trimester, 72 per cent in towns and only 69 per cent of the rural women visited the doctor in the first trimester.

MATERNAL MORTALITY

In 1949, 33 mothers died from causes related to pregnancy and childbirth. This gives a maternal death rate of 0.5 per 1,000 live births. Six of these women had cesarean sections. In addition sections were performed on two postmortem in an attempt to save the baby. Six deaths following cesarean sections give a death rate of 2.6 per 1,000 live births, over five times that of the over-all rate. The six deaths constituted 18 per cent of all maternal deaths. The mothers who died were 17, 19, 26, 30, 32 and 35 years of age. Four were para-0, one was para-1 and one a para-4. Reasons for cesarean in three were abruptio placenta; one, face presentation with contracted pelvis; one, toxemia and one, not stated. The cause of death in two cases was eclampsia, in two cases shock, in one case congestive heart failure and hemorrhage and in one case rheumatic heart disease.

INFANTS

The 2,226 cesareans resulted in 2,210 live and 54 stillbirths. There were 34 pairs of twins and two sets of triplets. Twenty-three pairs of the twins and both sets of triplets were born to rural women.

According to the custom of classifying any infant weighing 5 lb. 8 oz. or less as immature, 13 per cent of all the cesarean births were immature. Immaturity accounted for six per cent of all the live births in the state.

During the year 1949, 1.9 per cent of all live births died in the first month of life. The neonatal death rate on the cesarean infants during the same period was 5.7 per cent. There was some variation of death rates according to residence, but this is not marked as is shown in Figure 6.

The percentage of stillbirths delivered by cesarean section is higher than the over-all rate for

the state. Two per cent of all the infants delivered by cesarean were stillborn as compared to 1.5 per cent of all live births.

FETAL SALVAGE

It is sometimes confusing to try to estimate total fetal salvage as stillbirths are not counted in with the live births and do not enter into what we ordinarily consider a neonatal death rate. If we combine our stillbirths with our neonatal death rate we find that 7.7 per cent of all the infants delivered by cesarean section did not survive the first month. In the entire year with 62,897 live

FIGURE 6
Per Cent of Infants Dying in First Month of Life

Type of Birth	% All Neonatal Deaths	% Immature Infants	% Mature Infants
All Deliveries	1.9	20.8	0.75
All Cesareans	5.6	23.5	2.4
Rural	5.6	25.8	2.2
Town	6.3	26.1	2.0
City	5.4	18.7	2.8
Out-of-state	7.6	33.3	2.9

births and 994 stillbirths 3.5 per cent did not survive the first month of life. The chances of survival of the first month of life among cesarean babies was only half the chance of survival as seen in the over-all picture.

Other writers report various infant death rates. Kohn¹⁰ et al report fetal deaths of 16.1 per cent, 68 per cent of the deaths being due to prematurity. Mack and Siddall⁷ report 7.8 per cent infant death rate, McSweeney and Hassett,⁴ a neonatal death rate of 2.9 per cent.

The causes of death for 68 prematures were as follows: Prematurity, 42; atelectasis, 14; disease of mother, 2; congenital heart, 5; other congenital deformity, 1; asphyxia, 1; other reasons not clearly stated, 3.

The 59 infants weighing over 5 lbs. 8 oz. or weight not stated who died in the first month died of the following causes: Prematurity, 4; atelectasis, 14; congenital heart, 2; asphyxia, 4; hydrocephalus or meningocele, 13; disease of mother, 1; acute infection, 2; anoxia, 1; respiratory failure, 2; aspiration pneumonia, 2; birth injury, 1; malnutrition, 1; Rh factor, 3; cerebral hemorrhage, 4; reasons not clearly stated, 5.

The causes of the 54 stillbirths were abruptio placenta, 16; placenta praevia, 7; eclampsia, 3; toxemia, 2; ruptured uterus, 11; Rh factor, 2; contracted pelvis, 1; other, 12.

INDICATIONS FOR SECTION

The only method to obtain information on indications for doing a section was to refer to space in birth registration which asked for "any complications of pregnancy or labor." Only 52.7 per cent of all the birth certificates were completely filled in and indications have been tabulated from them. They are set forth in Figure 7.

Only two doctors referred to "Elderly Primipara" as an indication although there were 26 women over 40 years of age delivering their first

child. There is also a little question about the indication "Ruptured Uterus." If the uterus has ruptured and surgical procedure is to remove fetus and control resultant hemorrhage, it is not a cesarean if fetus has been extruded from the uterus. Considering this, maybe some of these surgical procedures should not be classified as cesareans. Rh factor is a new indication not reported in other literature. Hydrocephalus was mentioned as

FIGURE 7
Indications for Section

Indication	Number	Per Cent
Previous Section	204	17.36
Disproportion	332	28.25
Placenta Praevia	156	13.27
Abruptio Placenta	66	5.61
Eclampsia	49	4.17
Toxemia	47	4.00
Malposition of fetus	75	6.38
Systemic Disease of Mother	87	7.40
Labor started, no progress	41	3.48
Obstructive tumor	21	1.78
Rupture of Uterus	16	1.36
Inertia	25	2.12
Prolonged Pregnancy	3	0.25
Premature Labor	11	0.93
Hemorrhage	5	0.42
History Difficult Labor	4	0.34
Hydramnios	5	0.42
Hydrocephalus	7	0.59
Prolapse Cord	4	0.34
Multiple Pregnancy	6	0.51
Fetal Distress	1	0.08
Fetal Death	1	0.08
Rh Factor	4	0.34
Elderly Primipara	2	0.17
Sterilization	3	0.25
Total	1,175	99.90

pathology in seven cases. Cesarean section done in relation to sterilization was mentioned in three cases.

SUMMARY

1. Cesarean sections continue to be done at an increasing rate.

2. Incidence by occurrence or residence show prevalence of cesarean delivery to be much higher than average in a few counties. Six counties with the highest rates by occurrence also have the highest rates by residence.

3. Incidence is much higher in hospitals of 26 to 50 bed capacity than in larger hospitals.

4. The mothers in this study comprised 3.5 per cent of all the women giving birth to children during the year of 1949. The residence of these women was equally distributed between urban and rural areas. Eighty-eight per cent of the mothers were between ages of 20 and 39, five per cent were under 20 and five per cent over 40. The age shifted to an older group among rural mothers and to a younger group living in towns. Approximately two-thirds were having first or second child, 14 per cent having third or more. Parity in some instances was as high as eight to 11.

As far as we can judge prenatal care this group of women received medical attention earlier than the entire group of expectant mothers.

Maternal mortality among the women delivered by cesarean section was five times greater, although the over-all rate in the state was remarkably low.

5. The percentage of prematures delivered by cesarean section is higher than for other types of deliveries. The neonatal death rate is higher among babies delivered by section than other types of deliveries. The stillbirth rate delivered by section is higher than in other deliveries.

6. The indications listed appear to warrant intervention. The percentage of sections done because of eclampsia and toxemia seems to be decreasing. About 3.5 per cent sections show that labor was started and given a trial.

CONCLUSION

In reviewing the figures of this study we find that the maternal death rate is remarkably low considering the fact that only six women died as the result of 2,226 cesarean sections. On the other hand the maternal death rate among the women delivered by cesarean section was significantly higher than the over-all maternal death rate.

The fetal salvage among the babies delivered by cesarean section was not as good as in the over-all picture.

The small hospital seems to have the highest rate of sections. The medical staffs of these institutions should be made aware of these figures, and attention should also be called to the 48 per cent incomplete birth certificates filed.

The incidence of cesarean section is definitely higher in a few counties than in the remainder of the state. The county medical societies in all areas should be encouraged to review their own local situation. After Dr. Keettel's survey was published in Wisconsin, some of the hospitals in Milwaukee investigated their own situation and required that no section be done without a consultation. Dr. Roland S. Cron¹¹ reported one year later that in one hospital the incidence had dropped from 17.1 to 10.1 and in the second from 7.3 to 4.97 after adoption of a consultation requirement.

Dr. Josephine Barnes¹² of the University College Hospital in London wrote an excellent summary on the use of cesarean section and propounded that in spite of the advantages of a section we must constantly reiterate that there are enough risks to both mother and child to warn against its abuse. We must agree with her conclusion that the skill of a section lies not in its performance, but in the decision as to when it is to be used.

If a hydrocephalic baby is diagnosed preceding birth, most authorities feel that a destructive procedure would be a better choice than a cesarean section as even the Catholic Church sanctions draining the fluid from a hydrocephalic infant. Sterilization procedures should not be a recommendation for a cesarean section. If a vaginal delivery can be made, according to most authorities, a postpartum sterilization may be done more easily than the section. We must also consider the fact that many lives are saved by cesarean section and some thought should be given to areas where sections are not done and where the infant and maternal mortality may be made higher as a re-

sult of not doing sections. In closing I wish to repeat that this study has been done solely to stimulate interest and thought among the medical profession of the state in the hope that there will be more widespread interest in statistical surveys of maternal and fetal morbidity and mortality studies.

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CONGENITAL DERMOID CYSTS OF THE NASAL DORSUM*

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THIS congenital abnormality, consisting of a firm tumor mass frequently located at some point along the nasal dorsum and often connected by a fistulous tract to the surface epithelium, may be illustrated by figure 1, which shows a preoperative photograph



FIGURE 1

of Birkett's¹ case he described in 1900. Birkett credits the first description of this pathological entity to Lawrence who described it in the 1837 *London Medical Gazette*. Medical literature written in the English language has to date recorded 59 of these congenital abnormalities. Its infrequency becomes more noticeable when we find in Ward and Hendrick's² *Diagnosis and Treatment of Tumors of the Head and Neck* that, in its 818 pages,

only one-half page is used in discussing dermoid cysts with no mention of those occurring upon the nasal dorsum.

EMBRYOLOGICAL THEORIES OF ORIGIN

Luongo³ presented two embryological explanations for nasal dermoid cysts, the application of either theory depending upon the cyst's location. For those cysts occurring along the nasal dorsum

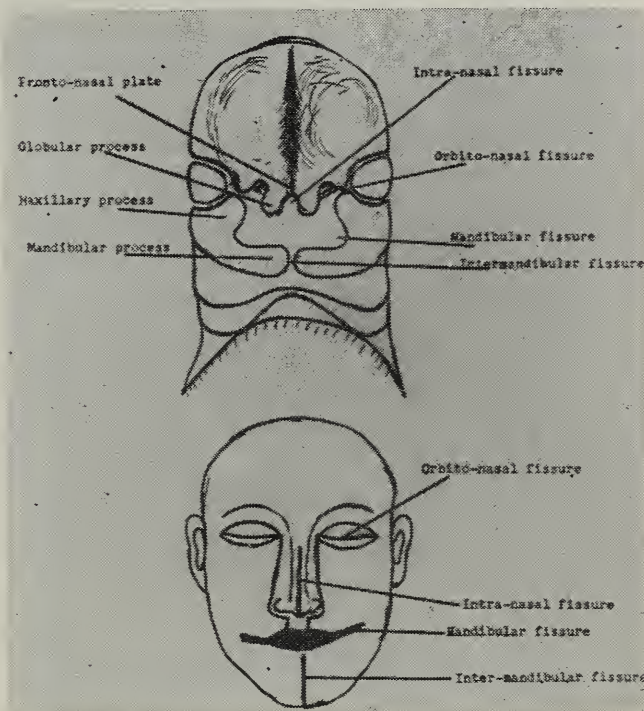


FIGURE 2

between the lower margin of the nasal bones and the tip and near the tip of the nose, the sequestration of some surface epithelium during the closing process of facial fissures is used to explain the formation of dermoids. Figure 2 illustrates from Luongo's³ writings how the globular or medial nasal processes unite to ultimately form the soft portion of the nasal dorsum, columella, philtrum and premaxilla.

When one considers those dermoid cysts in the region of the nasal bridge Luongo recalls that in the early embryo, the frontonasal plate which forms the nose, consists of a lamina of hyaline cartilage covered externally with skin, and internally with mucosa. After the third month of embryonal life, bony tissue extends in between the skin and cartilage. This bony tissue will form the nasal bones. The cartilage becomes absorbed during this process of ossification. During the gradual separation of the skin from the cartilage of the frontonasal plate by intrusion of the nasal bones, small portions of skin or epithelium become sequestered and develop into dermoid cysts which may lie beneath the nasal bones.

The third embryological theory relative to the formation of these congenital dermoid cysts is that of Brunner⁴ whose excellent and detailed discussion of nasal embryology must be read in the orig-

* Presented at the One Hundredth Meeting, Iowa State Medical Society, Sioux City, April 23-25, 1951.



FIGURE 3

inal to be appreciated, but varies from Luongo's second theory only in that he contends the nasal bones have their intramembranous formation after the dural connective tissue which will ultimately form their internal periosteum has separated from the overlying ectoderm, and that any ectoderm sequestered in the separation process must of necessity lie beneath the bony nasal bridge. If the displaced portion of ectoderm retains its connection with the skin, a primary fistula of the nasal dorsum will result. Figure 3, a photograph from Brunner's work, depicts a patient in whom in addition to the dorsal fistula a fistula is observed over the left nasal bone. At operation this extended through the lower margin of the bone which when removed, revealed a pea sized cyst.

Little mention is made in the literature concerning these cysts and fistulae as a familial characteristic, but the brother of the patient seen in Figure 3



FIGURE 4

had auricular fistulae, and Figure 4 illustrates dorsal nasal dermoids in a mother and daughter as presented by New and Erich.⁵

HISTOLOGY

Rosedale⁶ describes these cysts as most frequently having a flattened stratified squamous epithelial lining peripheral to which is usually a delicate fibrous capsule. In the wall of cysts may be found sebaceous glands and hair follicles. There may be metaplasia of the epithelium to the columnar type. A cheesy semisolid material is usually contained within the cyst, but when infection is present this may give way to fluid pus. Hairs may be found within the cyst contents and frequently protrude on the nasal dorsum through the fistulous tract.

DIFFERENTIAL DIAGNOSIS

These cases usually present no great problem in diagnosis but Davis and Berner⁷ have discussed several pathological entities which might well be

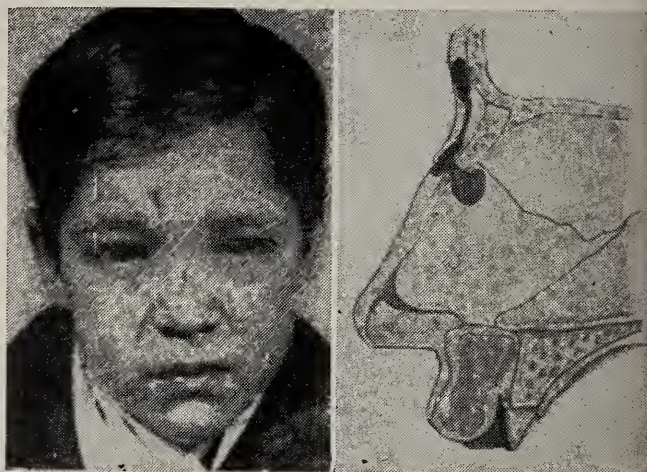


FIGURE 5

borne in mind. Meningocele by its translucency may be differentiated from the opacity of a dermoid and in addition is usually larger, more soft, fluctuant and drains cerebrospinal fluid. Compression of the jugular veins may cause the meningocele to become tense; pulsation may also be noted. Encephalocele is rare; and usually projects into the nasal cavity through the cribriform plate. Inclusion cysts present a history of trauma with embedded skin. In differentiating the dermoid from the sebaceous cyst one finds that dermoids occur more often in infancy and childhood whereas sebaceous cysts are rare in childhood. The overlying skin is usually attached to a sebaceous cyst while dermoids are often covered by freely moveable integument. Sebaceous cysts are moveable in the skin and with it whereas dermoids are usually attached to the underlying structures.

TREATMENT

The typical patient afflicted with a congenital dermoid cyst of the nasal dorsum has usually had his tumor mass present since birth or early infancy and if a primary fistula were not present, a second-

any one often is subsequent to previous injudicious simple incision and drainage in the attempted cure of a "simple cyst or abscess." Hairs frequently protrude from the fistula through which a sebaceous, purulent or bloody discharge often exudes. The mass, firmly attached to the underlying structures, may have a skin covering freely moveable or attached depending upon the presence or severity of secondary infection and previous incisions.

Surgical treatment of the nasal dermoid cyst seems facilitated if some idea of the cyst's size and ramifications can be determined preoperatively. Hartman⁸ injected radio opaque material into the fistula on the nasal dorsum of his patient and found the cyst to extend beneath nasal bones and into the septum. However, this method has failed in instances where the consistency of the cyst's contents prevented entrance of the radiographic material. Bryant's⁹ investigation with a probe is useful, but

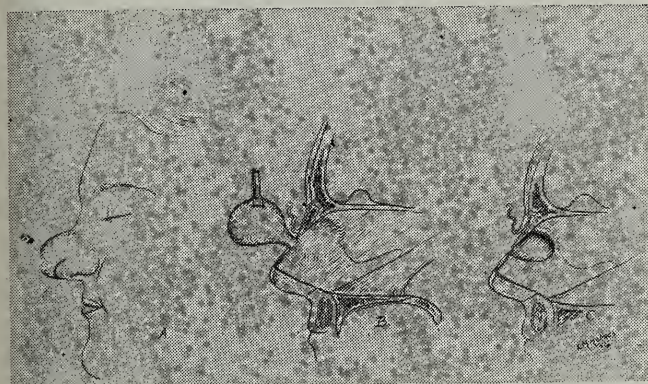


FIGURE 6

frequently can give only a rough impression of the pathological details. If all else fails, injection of gentian violet or methylene blue suggested by Juers¹⁰ is helpful in preventing incomplete cyst removal. Annoying soilage of the skin surface by these dyes may be prevented if the injection is performed the day before surgery.

Only complete excision of the cyst can be relied upon to produce a permanent cure, but in some cases in which a cyst ramifies beneath or through the nasal bones such excision could produce severe deformity of the nasal dorsum. Therefore, electro or chemical cautery has sometimes been resorted to for the abolition of these inaccessible cyst areas. Hagens¹¹ patient, Figure 5, illustrates such a case treated by chemical cautery.

A technic for handling large intraseptal portions of the dermoid cyst is presented by Holmes¹² Figure 6 in which one wall of the cyst plus septal mucosa was completely removed to allow permanent discharge of secretions into the nasal cavity.

CASE PRESENTATION

The first patient J. S. (preoperative photographs Figures 7 and 8) was a four month old white infant whose parents had noted a dorsal nasal fistula at birth. This fistula was located in the midline at about the center of the nasal bridge and was single

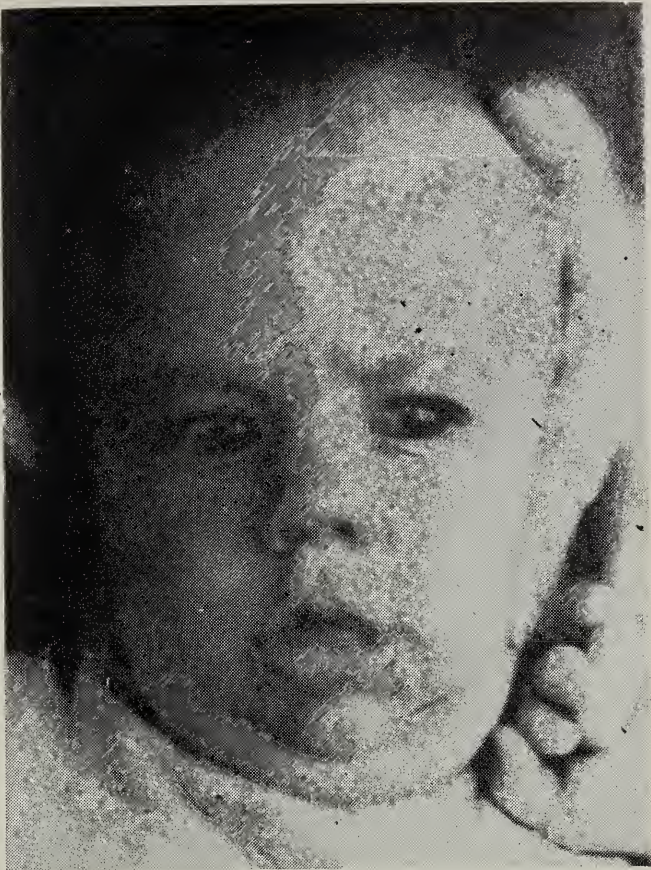


FIGURE 7

rather than double as poor photography depicts in Figure 7. Shortly after birth a smooth, firm immobile mass appeared beneath the fistula, and at time of the patient's first examination was about one-half centimeter in diameter. On July 27, 1948, under rectal pentothal and nitrous oxide oxygen anesthesia, the fistula and cyst were excised through a vertical skin incision by a combination of sharp and blunt dissection. Following removal of the cyst, which had been previously injected with one per cent gentian violet, a colored stalk

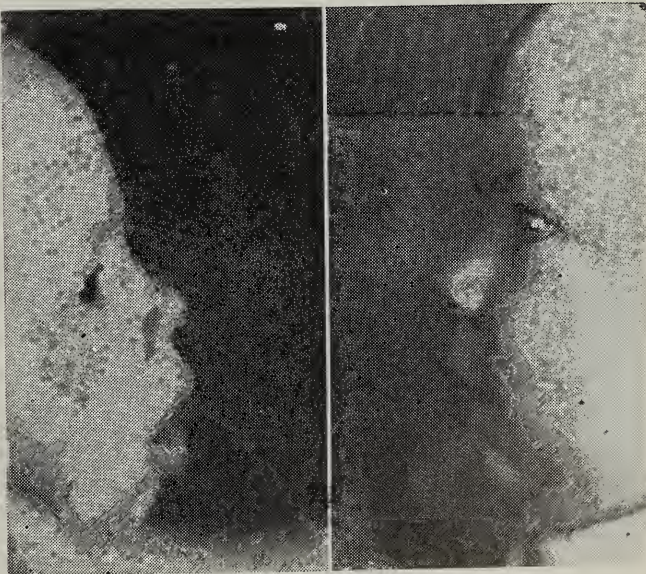


FIGURE 8



FIGURE 9A



FIGURE 9B

was seen to descend between the medial articulation of the nasal bones. This stalk was cauterized with a Davis Bovie unit setting twenty in the hope this would provide enough cauterization to destroy any remaining cyst lining and yet not produce necrosis of the nasal bones. The incision was closed with #00000 dermalon sutures. Our pathologist, Dr. John Rowe, reported as follows: "Microscopic examination reveals a lining layer of stratified squamous epithelium which is well differentiated and exhibits slight surface keratinization. Scattered well formed small hair follicles and sebaceous glands are noted beneath the epithelial lining. The remainder of the tissue is of a mature collagenous

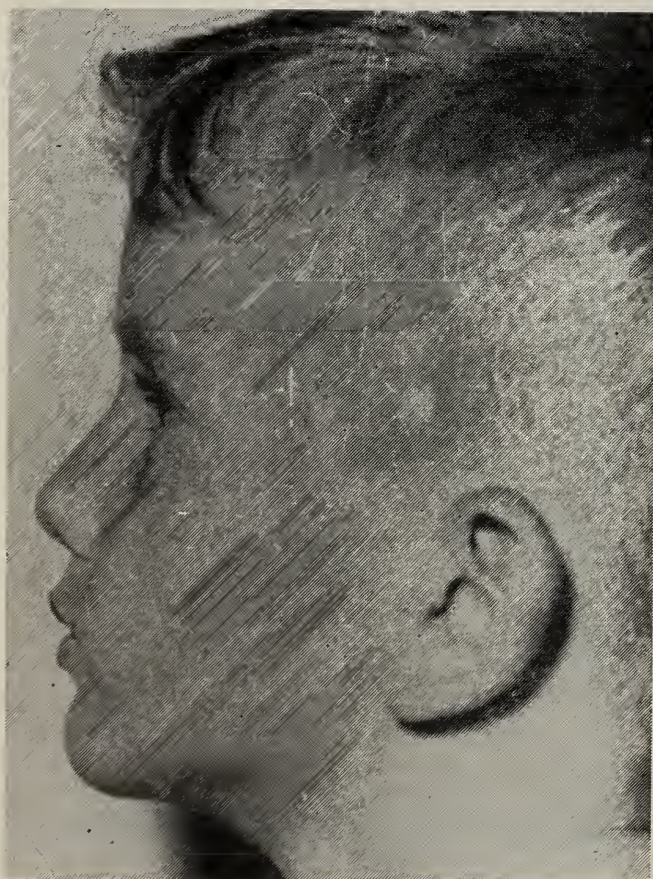


FIGURE 10

character with a small cluster of skeletal muscle fibers at one edge. Slight lymphocytic infiltration is encountered superficially. Diagnosis: Dermoid cyst, benign." Photographs, Figures 9a and 9b were taken of the patient in March, 1951. He has exhibited no signs of cyst recurrence.

The second case, L. G., was a white child age six who had had a draining sinus at the tip of his nose since birth. The parents had noted that when the nose received a blow, as so frequently occurs in children, a red tender swelling would soon appear under the skin of the nasal bridge and that the drainage from the fistula which had previously been of a sebaceous character would become purulent and bloody. Figure 10 was taken shortly after one of these episodes but poorly visualizes the mass. Under sodium pentothal anesthesia on July



FIGURE 11A

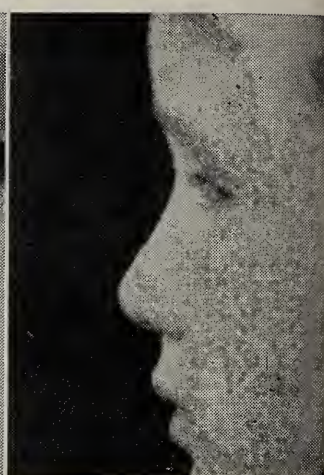


FIGURE 11B

29, 1949, the fistulous tract and cyst were excised through a vertical incision. With previous dye preparation as in case number one it appeared the cyst extended down between the nasal bones. Insertion of a probe confirmed this impression and cautery as in the first case was done. Our pathologist reported "Microscopic examination reveals a clearly defined lining of stratified squamous epithelium. Several small hair follicles are noted in the underlying collagenous stroma. A cystic space lined with squamous epithelium is observed. There is a strip of skeletal muscle tissue in the section depth. Diagnosis: Benign dermoid cyst." Photographs, Figures 11 a and b, of the patient were taken in March, 1951. There has been no cyst or fistula recurrence.

SUMMARY

Embryological theories of origin for congenital dermoid cysts of the nasal dorsum are presented.

Histology, differential diagnosis and treatment of these congenital abnormalities are discussed.

Two cases of congenital dermoid cyst of the nasal dorsum are described thus bringing to 61 the number of such cases recorded in the English language Medical Literature.

For the sake of completeness the bibliography

lists all references pertinent to the subject although many are not quoted in this context.

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Mercy Hospital

CLINICOPATHOLOGIC CONFERENCE
May 8, 1951

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AND
HAROLD R. PEASLEY, M.D.
DES MOINES

SUMMARY OF CLINICAL RECORD

Mrs. H. D., a 24 year old married colored woman, gravida I, para I, entered the hospital January 11, 1951 and died January 27, 1951.

Chief Complaint: Hemorrhage from the bowels.
Present Illness: Manifestations of gastrointestinal disturbance first appeared early during pregnancy (March, 1950) when, following a long period of constipation, she began to pass frequent dark, liquid stools containing a small amount of fresh blood. This episode lasted about one week. Mild symptoms of nausea and vomiting were relieved by two intramuscular injections given by her private physician and she remained well until May, 1950, when diarrhea returned. Loose stools, some of which con-

tained blood and mucus, increased in frequency until August, 1950. By that time she was having a bowel movement every one to two hours both day and night. She was then hospitalized August 9 to 17 and a search was made for intestinal pathogens. No ova or parasites were found on three separate examinations, and stool cultures on two occasions were negative for pathological organisms. The venereal disease research laboratory and Kline flocculation tests were found to be positive. A hemogram performed at this time revealed: Hemoglobin, 9.9 Gm. or 64.4 per cent; red blood cells, 3,350,000; white blood cells, 14,450 with a differential count of 69 per cent neutrophils, five per cent eosinophils, 23 per cent lymphocytes and three per cent monocytes. There were no abnormal urinary findings. Treatment consisted of a bland diet, kaopectate, sulfaquandine, perihemin capsules, duracillin, trisentine and sedatives. She continued to have from four to seven stools per day. On admission to the hospital her temperature was 100° F. (orally), but this returned to normal on the second hospital day. The pulse and respirations were within normal range.

On November 10, 1950, the patient had a normal delivery of an eight pound baby. Diarrhea continued in spite of various medications. On the day prior to admission the patient began to pass from two to four ounces of stool about every hour which had the appearance of whole blood with a few flecks of mucus. She also began to have cramping abdominal pain and hemorrhoids, present since childbirth, causing rectal distress. The patient reports that a diet high in carbohydrate exacerbates her diarrhea.

Previous Illnesses: None.

Childhood Diseases: Measles, mumps, chicken pox.

Review of Systems:

E. E. N. T.: Negative except for an occasional sore throat with upper respiratory infections.

Cardiorespiratory: There has been no cough, hemoptysis, chest or arm pain or palpitations. Some ankle edema was present during pregnancy.

Gastrointestinal: One week prior to admission the patient had fever, nausea and vomiting of greenish fluid associated with an upper respiratory infection.

Genitourinary: There is a need to "bear down" to start the urinary stream. The patient has no pain or burning with urination, increase frequency or hematuria.

Catamenia: Menarchi was at the age of 14 with periods about every 28 days until pregnancy. There was an average amount of flow, lasting three to four days. Slight dysmenorrhea was usually present. There has been no abnormal vaginal bleeding and the patient has not menstruated since childbirth.

Neuromuscular: The patient fainted twice during the present illness. There are no symptoms of central nervous system disease.

Physical Examination: Temperature, 100° F. (rec-

tally); pulse, 110; respirations, 22; blood pressure, 100/70.

General Appearance: The patient is a small, thin, well developed colored woman who appears somewhat older than her stated age.

Eyes: Pupils are round, regular and equal. They react to light and accommodation. Extraocular muscles are normal.

Nose: There is no discharge. The septum is intact.

Mouth: The teeth contain numerous caries. The

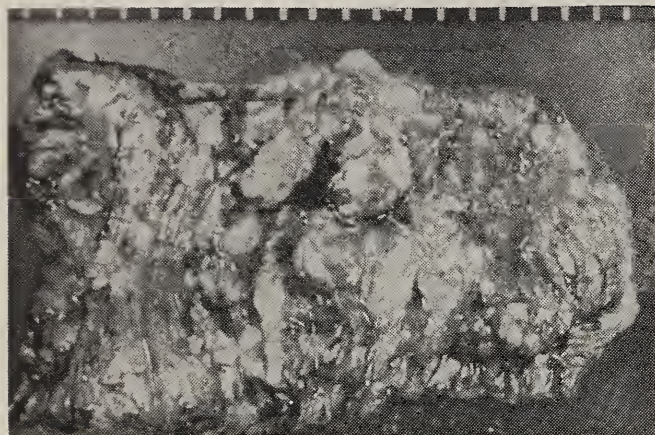


FIGURE 1. Multiple ulcerations of amebic colitis in ascending colon. Little mucosa remains.

pharynx is slightly injected. The patient has a hyperactive gag reflex.

Neck: There is no rigidity or adenopathy. The thyroid is not enlarged.

Thorax: The rib cage is symmetrical. Diaphragmatic excursion is full and equal bilaterally. The lungs are resonant to percussion throughout. Loud, high pitched rales which do not clear with coughing are present in all lung fields. The area of cardiac dullness is not enlarged. Heart rhythm is normal and no murmurs are heard.

Abdomen: The abdomen is flat. The liver and spleen are not palpable. There is marked tenderness in both lower quadrants which is more marked on the right.

Back: There is no costovertebral angle tenderness.

Extremities: No edema or clubbing is present.

Pelvis: The cervix is scarred. It has normal size and consistency. There is no adnexal tenderness.

Rectal: Digital examination was not attempted because of the presence of large, tender external hemorrhoids.

Laboratory Studies on Last Admission:

Urinalysis: Color, straw; reaction, alkaline; specific gravity, 1.003; albumin, negative; sugar, negative; sediment, an occasional pus cell.

Hemogram: White blood cells (on the evening of admission), 30,200; red blood cells, 4,850,000; hemoglobin, 16.0 Gm.; 250 mg. of Aureomycin was given every four hours for six doses and the following morning, white blood cell count was 18,200 with a differential count of 88 per cent neutrophils, 11 per cent lymphocytes and one per cent monocytes; hemoglobin, 14.5 Gm. or 94.4 per cent; red blood

cells, 4,910,000. Repeat hemograms showed a persistent decrease in white blood cells reaching 5,350 on January 24, 1951 with a differential count of 46 per cent neutrophils, two per cent eosinophils and 52 per cent lymphocytes. The red blood cell count dropped to 4,080,000 on January 13, 1951. Whole blood was administered as follows: 500 cc. on January 15; 250 cc. on January 19; and another 250 cc. on January 20. Red blood cell counts were recorded as: January 18, 4,820,000; January 22, 4,910,000; January 24, 4,320,000 and January 25, 4,810,000.

Blood serology: Venereal disease research laboratory flocculation test and Kline flocculation test, negative.

Sedimentation rate: (January 16) 47 mm fall in one hour (Westergren method).

Blood Chemistry: CO Combining Power, 54 volumes per cent (January 17); Blood dextrose, 236 mg. per cent (January 17); Potassium, 20 mg. per cent (January 17); and Potassium, 18.4 per cent, (January 26).

Stool Cultures: No growth of intestinal pathogens.

X-ray Studies:

Chest: (January 12) heart, lungs, pleura and mediastinum are essentially within normal limits.

Diaphragm: (January 14) No evidence of free air or fluid level under right diaphragm; air under left diaphragm is normal for the stomach. Bowel shadow is not unusual.

Clinical Course: Symptoms of cramping abdomi-

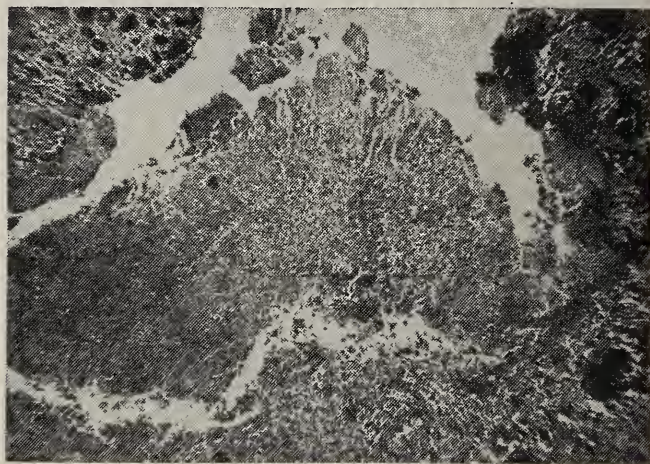


FIGURE 2. A flask-shaped ulcer of amebic colitis with characteristic undermined edges.

nal pain increased in severity and the patient continued to pass frequent stools in spite of treatment with cremosixidine, kaopectate, paregoric, morphine sulfate and aureomycin. A soft, bland diet was taken fairly well for the first three hospital days. On the fourth day there was moderate abdominal distention and rigidity and extreme tenderness of the lower abdomen, more marked in the right lower quadrant. The temperature at this time was 103° F. (rectally). A Wangenstein tube was inserted and nutrition and electrolyte balance were maintained thereafter by intravenous fluids.

Penicillin and dihydrostreptomycin therapy was started. Temperature ranged from 100.4° F. (rectally) to 103.8° F. (rectally) until the ninth hospital day when a normal reading was recorded. Attempts were made to resume former oral medication plus the addition of Banthine, but without success and the patient's condition became increasingly critical. Temperature returned to previous levels with the pulse showing a concomitant elevation (100-160 per minute). On the thirteenth hospital day, the abdomen was very distended and tense. There was extreme tenderness, more severe on the right side and light percussion produced marked distress. No masses or dull areas were detected. Bowel movements were frequent throughout hospitalization with development of episodes of rectal incontinence. The amount of gross blood diminished after the first few days with stools variously described as liquid stool with streaks of blood and mucus, liquid yellow stool or small mucous stool. On the last day of life the patient developed grunting respirations and carpopedal spasms which were temporarily relieved by intravenous calcium gluconate. Temperature showed an abrupt rise to 107.6° F. (rectally) terminally and the pulse was rapid and weak. The patient lapsed into a stuporous state a few hours before death. She expired at 12:45 p. m. January 27, 1951.

CLINICAL DISCUSSION

Dr. Peasley: This patient had a rather long history of diarrhea characterized by blood and mucus which began during the third month of pregnancy and ended in death with signs of peritonitis. The diarrhea was first irregular, then regular with fever and resisted all attempts at medical diagnosis which included laboratory studies. At this point, I would

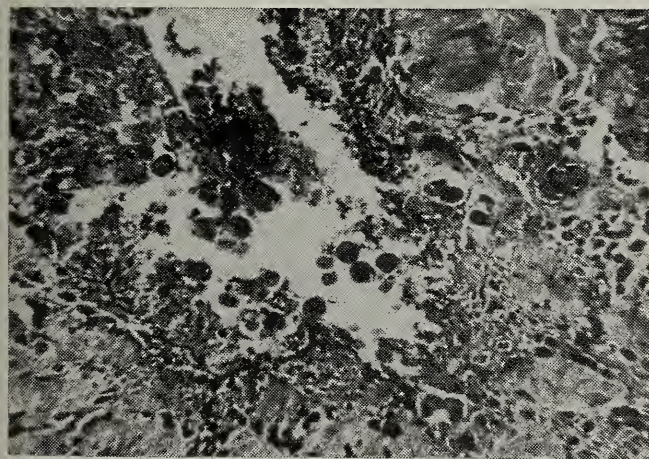


FIGURE 3. Multiple trophozoites of *Entameba histolytica* in an ulcer of amebic colitis.

like to call attention to the lack of family history. There is no family history stating whether there had been tuberculosis or polyposis. There is no information concerning the positive serology in August, 1950 which became negative in January, 1951 without treatment. No X-ray studies, proctoscopic examination or digital examinations were recorded. This seems to be an important omission

in trying to establish a differential diagnosis. The pregnancy may have been incidental except for the fact that it also may have aggravated the diarrhea. I shall endeavor to arrive at a differential diagnosis by the following summary:

(1) Endometriosis. I think we can rule this out because of the negative pelvic findings and the presence of pregnancy. There was no induration found in the pelvis, but, as you know, an endometriosis can involve the bowel.

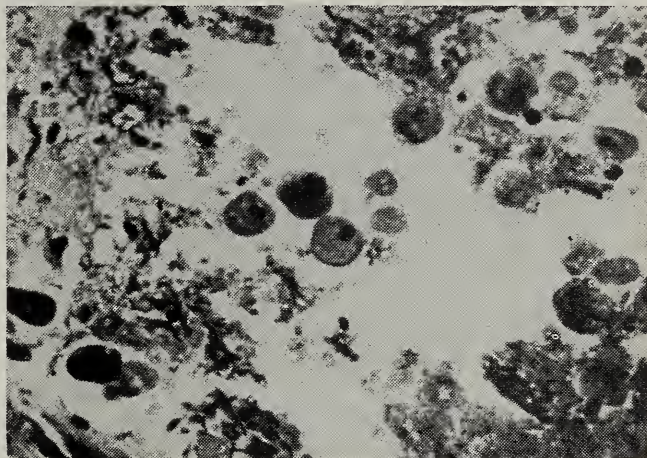


FIGURE 4. A higher magnification of trophozoites of *Entameba histolytica*. Note the clean lytic zone around the trophozoites and the absence of inflammatory reaction.

(2) Heavy metal poisoning. The absence in the history for the treatment of this poisoning is indicative that she did not have poisoning. Metal poisoning produces renal damage and laboratory studies would not indicate this was so.

(3) Lesions about the anus and lower rectum, syphilis, fissures and hemorrhoids. There can be ruled out because in these lesions the blood is bright, originating low in the gastrointestinal tract and is not usually accompanied by mucus. An adequate examination, however, is not recorded in the history.

(4) Neoplastic diseases of the colon and small bowel would not be expected in a patient 24 years of age. However, I recently had a 36 year old female patient with a neoplasm of the colon whose symptoms were similar to the patient under discussion. This patient also had intermittent bleeding and partial obstruction. Another case I can recall had complete obstruction. However, mucus and blood are usually constant in tumors of this type and the tumor can frequently be palpated.

(5) Acute and subacute infections of the colon and lower bowel such as amebic dysentery, typhoid and *Salmonella* infections. These are probably ruled out with a fair degree of certainty because of the negative stool examinations. We are dependent, however, upon the laboratory findings in establishing a diagnosis in these diseases.

(6) Intussusception. This is an acute disease producing blood and mucus. It is usually progressive and produces obstruction. I feel we can rule this out because of the chronic nature of the patient's illness.

(7) Diverticulitis. Symptoms of this disease are constipation and mucus and blood in the stools. Diverticulitis is capable of producing obstruction. This is not a common disease, however, and I do not believe diverticulitis is the cause of this patient's illness.

(8) Bleeding multiple polyps of the bowel. Recently, I observed such a case at Mercy Hospital. The stool contained mucus and blood and there was intermittent bowel obstruction. This patient was constipated early in her illness. Because of the absence of a family history, I do not believe this patient has polyposis.

(9) Regional enteritis. This disease involves the lower ileum and cecum and must be considered. It was first described in 1932. I have never encountered a case of regional enteritis, or if I have, I did not recognize it. In its chronic form, this disease may produce intermittent bowel obstruction.

(10) Ulcerative bowel lesion of some type. At no time did the patient seem to have a small bowel obstruction except possibly in the last day or two of her life and this obstruction, from the history, would be located high in the colon. Exquisite tenderness in the right lower quadrant is described. Of the ulcerative types of lesions in the colon, we must think of amebic colitis, tuberculous colitis and nonspecific ulcerative colitis. The patient lived in Illinois at one time and later in Iowa. As indicated by the 1933 outbreak, in Chicago, of amebiasis and the sporadic cases now seen in Iowa, we know amebiasis does occur in the midwestern states. As early as 1920, cases were seen in the medical clinic in Iowa City coming from the vicinity of Belle Plaine. Accurate diagnosis in amebic disease depends upon finding *Entamoeba histolytica* in the stools. I am assuming that the laboratory examinations were adequate and negative in this case. However, I realize that these examinations are not always conclusive. Amebiasis pursues an irregular course and may produce distant lesions much like our patient's symptoms, and peritonitis may be a complication. It is regrettable that no proctoscopic examination was made even though anesthesia would have been needed. Tuberculous infection of the ileum and cecum is rarely present in a patient without evidence of tuberculosis elsewhere. Gross blood is not common and a mass is usually present. There is no record of a mass being felt in this patient's abdomen. An X-ray of the chest is reported as not remarkable so we conclude this patient does not have pulmonary tuberculosis. Because of the rarity of tuberculosis of the bowel in the absence of pulmonary tuberculosis, we may rule this disease out. Chronic idiopathic colitis seems the most likely cause of this patient's symptoms. It would explain obstruction at irregular intervals and would also explain the negative laboratory findings. With the progression of this disease, perforation of the colon may occur, probably in the upper colon and this perforation could easily lead to peritonitis. I am assuming that the patient died of peritonitis, because of the description of the patient's terminal

illness in the hospital. The clinical history emphasizes that the patient was tender over the cecal area during the last two days of her life. This would also suggest the possibility of an appendicitis, which of course, is a common cause of peritonitis and may have been a concomitant disease. We were formerly taught two diseases should not be considered, but clinically, it is sometimes impossible to explain all of the patient's symptoms on the basis of a single disease.

In conclusion, I believe that this young lady developed a nonspecific ulcerative colitis, carried through her pregnancy uneventfully and finally died of peritonitis resulting from a perforation of the colon in the region of the cecum as a complication of this chronic nonspecific ulcerative colitis.

NECROPSY FINDINGS

Dr. Coleman: Dr. Bradford, is there anything that should be added to the history?

Dr. Clyde R. Bradford: A proctoscopic examination was done in the patient's room which was not too satisfactory as the patient was acutely ill at the time. There was an extreme tenderness, edema and swelling of the mucosa. No ulceration, however, was observed. To add to the history, the patient was treated for syphilis. She was at the seventh month of pregnancy during her first hospital admission. No gastrointestinal X-rays were made at that time. She entered the hospital for her terminal admission after having been seriously ill at home for six days.

Dr. Coleman: Are there other diagnoses?

Dr. Lester D. Powell: Dr. Coleman, I would like to say that I observed a case during my Navy service on whom an operation was performed for carcinoma of the rectum. One of my friends from Mississippi said I was wrong, that the patient did not have carcinoma, but we were quite sure that it was so we operated anyway. A colostomy was performed and later we were going to resect the rectum. Now I want to ask a question—had this patient been in the South?

Dr. Coleman: No.

Dr. Powell: This case was associated with partial obstruction and bloody diarrhea and was a case of lymphogranuloma venereum. I do not know that I would make that diagnosis, but certainly it should be considered in the differential diagnosis.

Dr. Harry A. Collins: I think Dr. Peasley gave a fine discussion of this case. I do not see how he could possibly arrive at any other conclusion especially in the absence of any positive laboratory findings.

Dr. Maurice J. Rotkow: Was a platelet count made?

Dr. Coleman: A platelet count was not made.

Dr. C. Harlan Johnston: I think we should consider amebic dysentery. Repeated laboratory examinations can be made without demonstrating the ameba.

Dr. Coleman: Are there any other diagnoses?

Dr. Earl D. McClean: I think there is a possibility of a low grade malignancy of the colon.

Dr. Coleman: This patient at autopsy weighed only 84 pounds. She was five feet two and one-half inches tall. The external examination of the body was not remarkable except for marked distention of the abdomen. Upon opening the peritoneal cavity a generalized peritonitis was demonstrated with localized abscesses observed in the pelvis and the lower left quadrant around the sigmoid colon and in the lower right quadrant around the cecum. Three perforations of the bowel were demonstrated; one being in the cecum and two being in the sigmoid colon. Examination of the pleural cavities was not remarkable nor was the examination of the heart. The lungs and liver were essentially negative as were the gallbladder, pancreas, adrenal glands and spleen. The gastrointestinal tract was the site of the major pathology. There was an ulcerating lesion of the colon beginning at the ileocecal valve and extending down to and involving the rectum. This ulcerative process was so severe that approximately 75 per cent of the mucosa of the colon had sloughed away, leaving small islands of edematous mucosa. This ulcerative colitis was caused by *Endamoeba histolytica*.

We have a gross photograph here showing one of the areas where fragments of the mucosa remain; elsewhere, there is extensive ulceration. In a microphotograph taken from the colonic wall of the patient we note circumscribed objects with dark spherical centers which are trophozoites of the *Endamoeba histolytica*. Trophozoites are found only in the tissues. You will note an absence of inflammatory cells around the trophozoites. The ameba produce a cytolytic enzyme which destroy the mucosa with the formation of ulcers. As these flask-shaped ulcers are produced by the lytic action of the ameba, secondary infection takes place with the formation of an inflammatory reaction. Exudate on the surface of the ulcer forms a pseudomembrane so suggestive of ulcerative colitis. A higher magnification of the trophozoites illustrates the zone of lysis where the tissue has been digested away.

Amebiasis is usually found in adults; however, occasional cases have been described in children. Males predominate in about a four to one ratio. There is a widespread geographical distribution, cases having been recorded all over the world. There is no seasonal incidence. The etiologic agent is the *Endamoeba histolytica*. Trophozoites, the form observed in tissues, are not infectious to man. They are found only in the tissues and in the intestinal content. When ingested, they are destroyed by the action of these gastric and intestinal juices. The cysts, however, are infectious and may be transmitted by contaminated hands, food or drink. The infection rate is especially high in asylums and prisons, and may approach 25 per cent. Craig, one of our outstanding authorities on amebiasis, reported the incidence

among physicians to be as high as 12.7 per cent; among food handlers, 12.5 per cent; among students in the United States colleges, 4.1 per cent and in the general population, 7.4 per cent. In contrast to Craig's figures we have those cases reported to the Iowa State Department of Health: In 1949, eight cases were reported with one death; during the first nine months of 1950, nine cases were reported. This would surely lead one to believe we must not be looking for cases of amebiasis properly. The cecum is the most likely site in the intestinal tract for a primary site of colonic lesions; the appendix is involved in 33 per cent, the cecum in 87 per cent, the ascending colon in 57 per cent, the splenic flexure in 12 per cent, the descending colon in 4 per cent, the sigmoid colon in 33 per cent and the rectum in 39 per cent.

The typical gross picture of amebic colitis is that of an ulcer with undermined edges giving the ulcer a flask-like shape. Any chronic colonic ulcer may be an amebic ulcer for this flask-like characteristic is not observed in every case. Microscopically, we have already observed the coagulation necrosis with slight inflammatory reaction. Lesions may be observed in almost any part of the body. They may be located in the brain, lung, pericardium, pleural cavities, liver, bladder, bones and perineum.

Ninety-five per cent of all fatal cases of amebiasis have amebic colitis, amebic liver abscess or both. Ninety per cent of all cases of amebic liver abscess of the liver have an active amebic colitis. Fifty per cent of all fatal cases of amebiasis have a complicating liver abscess. Sixty-five per cent of all cases of amebic liver abscesses have multiple abscesses. Seventy to ninety per cent of fatal cases of amebic liver abscesses show only right lobe involvement. Sixty-five per cent of all cases of amebiasis die as a result of amebic colitis and 50 per cent of all cases of amebic colitis die as a result of perforation. Thirty per cent of all fatal cases die as a result of complicating liver abscesses.

Certain lessons may be learned from the case under discussion tonight that should be of extreme importance in the handling of future cases. I would like to emphasize the necessity of repeated stool examinations. Andrews, in his survey, stated that six examinations were necessary to demonstrate 75 per cent of the infections. He also pointed out that the use of saline cathartics tremendously increased the percentage of positive stool examinations. In his series of known infected cases, the proper use of saline cathartics resulted in positive findings in 88.9 per cent of stool examinations. There are two cathartics that may be recommended. These are magnesium sulfate and Fleet's phosphosoda. In our experience, the magnesium sulfate is the most efficient. The reason for the use of saline cathartics is this: Only 50 per cent of the patients with amebiasis have diarrhea. Trophozoites are found only in diarrhetic stools. Cysts are found in formed stools. The cyst forms are frequently difficult to demonstrate and

there may be difficulty in differentiating these cysts from the cysts of at least four other intestinal parasites. Therefore, it is better to demonstrate the trophozoite forms for they are characteristic. The saline cathartics empty the bowel of feces and carry down to the rectum some of the trophozoite forms. These may be obtained by collecting the small amount of material passed as the patient strains at stool. It should be emphasized, however, that this exudate must be examined immediately. It is common practice in many proctology clinics and laboratories to set up a microscope in the same room where the material is collected by proctoscopic examination or direct passage. If a proctoscopic examination is done, swabs may be obtained from ulcerative lesions in the bowel or from exudate present in the rectum. The trophozoite forms are fragile and lose their motility rapidly. The use of the warm water bath in an effort to keep the stool at 98.6 degrees as it is transferred to the laboratory is not recommended. The cyst forms, which are present only in formed stools, never in diarrheic stools, are best observed by use of one of the concentration technics. The zinc flotation method and several others have been described.

I would like to emphasize the lack of characteristic symptoms and the lack of a characteristic proctoscopic picture of ulcerative colitis. The diagnosis of ulcerative colitis should be made only after all other causes for ulcerating lesions in the colon have been eliminated.

Dr. Floyd A. Springer: Suppose we assume that this patient had a barium enema. What would the finding have been? I think we would report it as a colon showing complete absence of haustral markings, diminution of calibre and moderate shortening. The roentgenological impression would have been ulcerative colitis, which would have been correct and is in no way different from the nonspecific ulcerative colitis with this degree of involvement.

The other types of amebic lesions are: lesions of the cecum and amebic granulomas. If there are any lesions which, because of their roentgenological appearance should suggest amebic involvement, they are lesions of the cecum. These vary considerably. In some cases it is slight and amounts to narrowing of the tip; in some, the cecum becomes so shrunken that it may be only two or three cm. in diameter. Less frequently, the cecum is irregular in outline and narrow without much shortening. Increased patency of the ileocecal valve is usually noted but no involvement of the ileum has been reported. Even these findings are not specific. They may be present in carcinoma, tuberculosis or regional enteritis, but when deformity of the cecum is present, amebiasis should have a place in the differential diagnosis.

Amebic granulomas may occur at any point in the cecum. There is marked thickening of the wall of the bowel usually underlying an ulcerated mucosa. Narrowing of the lumen takes place and

may progress to complete obstruction. A readily palpable tumor mass is frequently present. These lesions manifest themselves in the roentgen examination as irregular filling defects similar to carcinoma and, indeed, amebiasis and carcinoma may coexist. These lesions may also simulate lymphogranuloma. In closing, may I say that while the lesions on roentgen examination are not diagnostic, the roentgenologist should keep the possibility of amebiasis in mind in the consultation.

Dr. Coleman: Thank you Dr. Springer. Again, I would like to emphasize the importance of repeated stool examinations. I would suggest that you order at least six stools for examination before the diagnosis of amebiasis is eliminated. If you will notify my office of a patient suspected of having amebiasis, we will see that the proper cooperation is obtained from the laboratory in having someone there to supervise the collection of the specimens or if proctoscopic examination is done, to have someone there to examine the specimen.

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NEW OFFICERS OF THE GRIEVANCE COMMITTEE

The Grievance Committee of the Iowa State Medical Society held its organization meeting in Des Moines on Sunday, May 28. Dr. S. D. Porter of Grinnell was chosen chairman for the coming year; Dr. H. B. Weinberg of Davenport vice-chairman; and Dr. L. W. Swanson, Brick and Tile Building, Mason City, secretary.

Other members of the committee are: L. C. Kuhn of Decorah, T. L. Ward of Arnolds Park, J. W. Bushnell of Sioux City, E. M. Kersten of Fort Dodge, R. L. Knipfer of Jesup, E. A. Larsen of Centerville, L. E. Hooper of Indianola and C. H. Flynn of Clarinda.

MORBIDITY REPORT

Disease	May 1951	Apr. 1951	May 1950	Most cases reported from these counties:
Diphtheria	1	0	2	Jackson
Typhoid Fever	0	0	0	.....
Scarlet Fever	23	52	30	Black Hawk, Linn, Polk
Smallpox	0	0	0	.....
Measles	807	530	1094	Des Moines, Story, Woodbury
Whooping Cough	72	22	97	Clinton, Black Hawk, scattered
Brucellosis	42	31	4	Scattered
Chickenpox	305	441	318	Des Moines, Dubuque, Sioux, Woodbury
Meningitis, men.	4	5	3	Floyd 1, Polk 2, Louisa 1
Mumps	359	321	202	Black Hawk, Des Moines, Johnson
Pneumonia	6	7	6	Des Moines, Greene, Polk
Poliomyelitis	5	7	11	Grundy 2, Hamilton, Page, Polk
Rabies in Animals	52	46	53	Boone, Greene, Polk
Tuberculosis	91	56	86	For the state
Gonorrhea	38	35	40	For the state
Syphilis	155	127	137	For the state

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No. 7

The Official Issue

As is customary, this volume of the Journal is devoted to the annual official issue of the Iowa State Medical Society. You will find compiled the Transactions of the Society during the Annual Meeting at Sioux City during April. The issue also includes the complete Roster of Members. It is highly desirable that this Roster be set aside for handy reference.

It is again an opportune time to urge all physicians to familiarize themselves with the Transactions of the House of Delegates in order that familiarity with the problems which confront the profession at the present time and the solutions of these problems may be better understood by each member. Such perusal of the record will impress the reader with the immense amount of effort and thought which has been expended by the State Society officers in looking out for the best efforts of the profession.

Long Term Objectives—AMA and State Society

It is sometimes hard to state in concrete terms the objectives toward which any organization is working, particularly when the organization is scientific and educational in nature and not designed for profit. We would find it difficult to express clearly what we in the Iowa State Medical Society are striving to attain over the long pull, and possibly because of that we appreciate the clarity with which Dr. Elmer Henderson, retiring president of the AMA, set forth the long term objectives of the American Medical Association in his talk before the House of Delegates in Atlantic City.

To those who question the purposes for which the \$25 dues are being used, these objectives provide a definite answer. Our national organization has an ambitious program outlined, a program to which all of us must lend our support. No group of officers alone can carry out these objectives; it will take the combined effort and good will of every physician to make them a reality. We feel sure every member will find them worthy.

They are as follows:

1. Aid to medical education by raising funds from physicians, medical organizations and others in the field of medicine.

2. Cooperation with other professional groups to meet the problems of hospital standardization.

3. Promotion and development of voluntary health insurance.

4. Establishment and effective use of grievance committees to iron out misunderstandings between physicians and patients.

5. Encouragement and aid in the establishment of night and emergency call systems, to assure 24-hour medical service in local communities.

6. Development and operation of community health councils to solve health problems and improve local health facilities.

7. Assurance of an adequate supply of properly trained physicians.

8. Encouragement and promotion of increased interest in general practice and greater emphasis on the training of good family doctors.

9. Expansion of scientific activities which make the AMA the focal point of American health programs.

10. Keeping doctors informed of the latest medical advances through the publication of scientific journals.

11. Working with employers and employees to reduce health hazards in industry.

12. Solution of health and medical care problems in rural areas.

13. Closer relationships between medical affairs and federal activities.

14. Cooperation with the federal government, armed forces and other agencies to assure a proper supply of doctors for national defense and security.

15. Participation in the international activities of the World Medical Association.

Most of these objectives have been conceived within the past ten years in response to changing conditions with which the world is faced. Medicine is not an isolated art; it is inextricably bound up with many facets of economic life. Because of that, the medical profession must enlarge its scope of ministration and that is why both the national and the state societies have had to increase dues to finance activities.

Analyzing our own organization with the yardstick set up by the AMA, we find ourselves lagging on the first objective. Very few physicians in Iowa have contributed personally to the edu-

cational fund. It is hoped the number may be increased greatly in the coming months.

We have been one of the leading spirits in the Iowa Interprofessional Association and on objective number two we probably rank fairly high. This coming year we also have other committees appointed to work in this field; one on interprofessional relations as such, the other directly on hospital and medical relationships.

Iowa was one of the first societies to organize its Blue Shield plan and the medical profession is cooperating to make it more widespread and comprehensive.

Our Grievance Committee has been in existence for a year and has already accomplished a great deal in giving the public a place to which to bring its problems. The committee is asking for more work and it vouches for almost one hundred per cent cooperation from the physicians.

On number five, many county medical societies have set up night and emergency call systems, thus enabling the citizens of the county to secure the services of a doctor when needed.

We possibly are not doing our best on participating in local health councils (number six). The medical profession should be active in every such council, lending advice and counsel on medical matters to the other members of the council. We need to assert a position of leadership in such matters.

On numbers seven and eight the State Society has encouraged the enrollment of more students in the medical school and has tried to discuss with our legislators the need for enough funds to make an increase in enrollment possible. The State Society has also worked for several years in getting more general practitioners trained. Its latest effort toward aiding the cause of medical education is the creation of the Baldrige-Beye Loan Fund. One dollar is set aside from each paid membership to be available for loan purposes to worthy junior or senior medical students.

On points nine and ten, we as a State Society cannot hope to reach the goal of the American Medical Association, yet we, too, have our programs designed to keep our members abreast of scientific medicine and we try through our Journal to give them worthwhile scientific articles which will be helpful to them in practice.

Our industrial health committee is an active one and is trying to carry out the aims of the AMA. Our new committee on rural health hopes to achieve much this year and has an ambitious program outlined.

While we cannot try for the close contact with federal activities which the AMA necessarily must have, (as outlined in numbers thirteen and fourteen) we do have similar responsibilities toward state governmental agencies and are doing far more along this line than we have in the past.

It should be said that more and more doctors are being drawn into Society activities, and as they lend their efforts to those of former commit-

tee members and officers, the programs gain new impetus.

No program can be confined to the national level. Rather it must be integrated with state and county programs and be activated by the individual physicians.

These objectives have been set up in order to bring the best medical care possible, not only to the people of our country, but eventually to the people of the world through our participation in the World Medical Association. This, doctor, is our program. Individually it would stagger us, but pooling our strength through our county, state and national associations, we can achieve it if we will.

Reimplantation of Teeth

One of the fascinating advances of modern dentistry has been the development of reimplantation, when a valuable tooth cannot be saved by the usual conservative methods. Perint* has reported on the results of reimplantation of posterior teeth after root filling.

Each individual tooth has an important function and therefore should be preserved if preservation is at all possible. Reimplantation of front or premolar teeth should be tried only in cases of loose teeth following accidents. If the tooth is replanted within about half an hour, the periodontal membrane is probably still vital and the chances of a successful result are enhanced. To preserve a molar tooth is more important for a patient with a full complement of teeth, than for a patient wearing a prosthetic appliance. The procedure is indicated for young patients with good hygiene who have lost but one or two teeth, to avoid the necessity of a partial denture. In such cases the reimplantation of a pillar tooth and the insertion of a fixed bridge are very useful and effective. It is absolutely indicated if the tooth concerned is the only effective support for an obturator, or sometimes as provisional treatment in cases of fractures.

The age of the patient is important. All individuals with an exudative diathesis, blood dyscrasias, hormonal disturbances, gingivitis, pyorrhea or whose tolerance to infection is diminished should be excluded. The tooth, the reimplantation of which is planned, should be examined anatomically. Though teeth with diverging roots have a better bone support they cannot be reimplanted if the roots are extremely diverging or declining or thickened at their apices. Other contraindications are those cases in which the reintroduction of the tooth is mechanically impossible.

In the absence of contraindications the reimplantation has no disadvantages. Neither the dental surgeon nor the patient should overlook the fact that reimplantation is preceded by extraction of the tooth. No promise should be made concerning

* Perint, E. J.: Oral Surg., Oral Med. & Oral Path., May 1951.

the success of the operation, since the best plan may fail at the moment of the extraction if the tooth fractures or if the alveolus is severely damaged. This accident sometimes cannot be prevented, even if every precaution has been taken. It is possible that the reattachment of the replanted tooth may fail because the resorbing alveolar bone will give no support to the tooth. There are cases in which suppuration takes place after the operation. It is believed, however, that the majority of unfavorable results are due to lack of proper care in the selection of cases. The great advantage of reimplantation lies in the fact that the whole treatment can be completed within one hour, which is much less than the treatment of a sterile extirpation of a pulp in the case of a molar tooth.

Extraction should be followed by careful curettage, limited to the region of the apex. After the wound has been dried, it must be examined to ascertain whether the wall of the alveolus and the septum have not been damaged. If the body parts have been damaged, the injured particles are removed and the chances of a successful operation must be reconsidered. If the injury has involved the septum, or if a large part of the alveolar wall was removed, it is wise to desist from the operation. The tooth is washed in a physiologic salt solution of body temperature. Then it is seized with a sterile swab, its apex removed, and the root canal or canals filled by a retrograde approach. Occasionally, the tooth may be affected by caries, in which case the tooth should be filled before it is reimplanted. Before the reimplantation, the wound cavity is washed with physiologic salt solution to remove the clot formed after the extraction; on replacing the tooth only a slight pressure should be exerted. The gingiva is replaced upon the tooth by delicate stroking movements of the fingers. If a solitary tooth is to be reimplanted it is advisable to fix it to the nearest tooth by an eight-shaped metal wire. The bridge or an acrylic splint can be made previously or afterward. It is advantageous to make it previously because such a bridge or splint is the best means of fixation if it is put in place immediately after reimplantation. Occasionally, an old bridge can be used for the same purpose.

Can the Cost of Medical Care Be Lessened?

We are all cognizant of the hue and cry which is being generated in some quarters about the high cost of medical care. Unfortunately, no differentiation is made between the cost of physicians' services and the auxiliary services such as drugs, hospitalization, nursing, and the like. In most instances the physician's fee is smaller than the hospital cost. Our own Workmen's Compensation Law bears evidence to that when it makes the amount payable to hospitals twice that allowable to doctors. The law also makes special provisions for nursing care and that allowable amount is also larger than that allowed for medical fees.

Bearing all that in mind, might we still not pause and consider if there are ways in which such costs might be lessened in some instances. No one would wish to suggest that the patient should not receive all of the services and medications he needs, but should we not be realistic about some conditions and govern our medical care accordingly?

Speaking specifically about medical care of old age assistance recipients, we should remember that these persons are suffering for the most part from progressive degenerative diseases and that not much can be done to improve their condition. Should not the simplest remedies compatible with efficiency be used, rather than the new, expensive preparations which have not demonstrated their worth in such conditions? Why should expensive liver extracts be used in secondary anemias when iron therapy is more effective? Why should expensive vitamins be prescribed when proper nutrition, supplemented by simple vitamins if indicated, should suffice? Are penicillin or the new antibiotics necessary over a long period of time in the average chronic condition? Should not our aim be to keep these people as comfortable as possible with the simplest remedies, knowing that we cannot help them permanently? Do we not have a certain moral obligation to consider the cost of medical care somewhat when we prescribe for our patients? And are not all of these things true, whether our patient be an old age assistance recipient or one of private means?

To go a step further, might we not be able to reduce costs for Blue Cross if we tried to prescribe the simplest remedies which we know will be effective? We as physicians are responsible for the costs incurred under Blue Cross insurance, and it is very much to our interest to keep that insurance within the price range of the majority of our patients. Utilization of Blue Cross and Blue Shield has increased tremendously in the last two years. Neither are intended to cover diagnostic procedures. We as physicians who have the authority to order hospitalization should face that issue squarely in dealing with our patients.

This does not mean that newer drugs should not be used experimentally at times, nor does it mean we should resist hospitalization when it is needed. Let us "temper justice with mercy" by remembering there may be simpler and less expensive methods of achieving the end we wish, and that we may be able to give as good medical care at a more reasonable cost to our patients.

Misleading Statement by AAPS

Since the May, 1951, *Newsletter* of the Association of American Physicians and Surgeons contains an inaccurate statement concerning the "endorsement in principle" of the AAPS by the Iowa State Medical Society, it seems only proper that a public announcement be made to our members

(Continued on page 318)

President's Page

It is my purpose this month to emphasize the work of the Trustees, those "flinty-eyed" watchdogs of the finances of the state organization. The three members—Doctors Larimer, Coffin and Billingsley—are fortunate choices for an arduous task, one without glamour, requiring a designated meeting each month as well as many others when specific problems arise. The constant study of the budget, judicious evaluation of rapidly expanding developments of committees, occasional curtailment of expenditures wherein our financial structure might be in jeopardy—these are but a few of their myriad tasks. I hope you appreciate their work in behalf of our Society.

In his pre-induction remarks your President submitted a plea for cooperation with the medical school toward establishment of the preceptorship system for senior students. It was highly gratifying to receive a copy of a letter addressed to the Dean's Committee from the Secretary of the Union County Medical Society. Therein the members endorsed the plan and offered 100 per cent cooperation. Thus does Union County become the first county society to endorse the plan and I salute them for their expression. Also, I have received a letter from the Chairman of the Dean's Committee expressing interest and requesting a conference on the subject. I would be happy to have support from other county societies which approve the plan.

Lastly, I should like to emphasize the request contained in my letter to each of you several days ago concerning contribution to the AMA fund for aid to medical schools. It has now been ruled that such contributions are deductible from federal income tax. A little figuring will show you that a contribution of \$100 actually will amount to much less than this amount. Let's make Iowa high—per capita contribution.!

Donald C. Konzett, M. D.

President

TRANSACTIONS OF THE HOUSE OF DELEGATES

Iowa State Medical Society, One Hundredth

Meeting, April 23-25, 1951

MONDAY MORNING, APRIL 23, 1951

The annual meeting of the House of Delegates of the Iowa State Medical Society, held in conjunction with the One Hundredth meeting of the Society, at the Auditorium, Sioux City, Iowa, April 23 to 25, 1951, convened at 8:45 a.m., Dr. D. C. Konzett, Speaker of the House, presiding.

The Speaker: This is the official opening of the first session of the One Hundredth meeting of the Iowa State Medical Society and the first meeting of the House of Delegates.

I will ask the Secretary to call the roll, and I will ask further that any delegate or alternate who comes in after the roll call is begun will please report to the Secretary so that he may be properly accredited.

Secretary Phillips called the roll and the following persons were present:

DELEGATES

Audubon—L. E. Jensen
 Benton—J. E. Blumgren
 Black Hawk—T. L. Trunnell
 Black Hawk—C. D. Ellyson
 Black Hawk—H. A. Bender
 Boone—W. H. Longworth
 Bremer—O. C. Hardwig
 Buchanan—R. L. Knipfer
 Calhoun—P. W. Van Metre
 Carroll—J. M. Tierney
 Cerro Gordo—C. O. Adams
 Cerro Gordo—J. E. Houlahan
 Chickasaw—P. E. Gardner
 Clay—E. E. Munger
 Clinton—R. F. Luse
 Clinton—R. T. Lenaghan
 Crawford—A. H. Grau
 Dallas-Guthrie—H. W. Smith
 Davis—R. Schoonover
 Decatur—G. P. Reed
 Delaware—H. H. Ennis
 Des Moines—R. D. Allen
 Dickinson—T. L. Ward
 Dubuque—D. F. Ward
 Emmet—J. P. Clark
 Fayette—W. B. Henderson
 Hamilton—F. F. Hall
 Hardin—J. J. Shurts
 Henry—J. R. Beebe
 Ida—M. J. Grubb
 Iowa—C. F. Watts
 Jasper—J. W. Billingsley
 Johnson—R. H. Flocks
 Johnson—E. F. Van Epps
 Johnson—E. W. Paulus
 Johnson—Nathan Womack
 Lee—L. C. Pumphrey
 Lee—R. L. Feightner
 Linn—C. H. Stark
 Linn—F. G. Murray
 Linn—G. R. Andre

Lucas—Dean Curtis
 Lyon—G. D. Bullock
 Madison—I. K. Sayre
 Marshall—D. D. Harris
 Marshall—O. D. Wolfe
 Montgomery—Oscar Alden
 O'Brien—T. D. Kas
 Page—G. H. Powers
 Pocahontas—W. F. Brinkman
 Polk—M. T. Bates
 Polk—T. A. Bond
 Polk—R. F. Birge
 Polk—Fred Sternagel
 Polk—D. H. Kast
 Polk—F. M. Burgeson
 Polk—W. B. Chase, Jr.
 Pottawattamie—F. N. Weber
 Pottawattamie—C. V. Edwards
 Pottawattamie—R. M. Collins
 Poweshiek—S. D. Porter
 Sac—L. B. Amick
 Scott—L. V. Schroeder
 Scott—J. H. Sunderbruch
 Scott—W. C. Goenne
 Scott—George Braunlich
 Story—J. G. Fellows
 Story—J. D. Conner
 Tama—C. W. Maplethorpe, Sr.
 Taylor—G. W. Rimel
 Union—H. G. Beatty
 Van Buren—L. A. Coffin
 Wapello—C. A. Henry
 Wapello—W. C. Wolfe
 Warren—L. E. Hooper
 Wayne—J. H. McCall
 Webster—E. M. Kersten
 Webster—O. N. Glesne
 Winneshiek—A. F. Fritchen
 Woodbury—E. M. Honke
 Woodbury—C. T. Maxwell
 Woodbury—J. W. Bushnell
 Woodbury—P. L. Bettler
 Wright—G. E. Schnug

ALTERNATES

Allamakee—C. R. Rominger
 Appanoose—E. E. Edwards
 Clarke—H. N. Boden
 Des Moines—C. J. Lohmann
 Dubuque—J. W. Lawrence
 Grundy—G. W. McDowell
 Jefferson—R. A. McGuire
 Johnson—J. M. Layton
 Kossuth—D. L. Bray
 Mills—E. C. Magaret
 Osceola—F. B. O'Leary
 Palo Alto—H. L. Brereton
 Polk—C. A. Sones
 Polk—M. I. Olsen
 Polk—E. D. McClean
 Shelby—C. V. Bisgard

OFFICERS

President—T. F. Thornton
 President-elect—D. C. Conzett
 Secretary—A. B. Phillips
 Trustee—B. T. Whitaker
 Trustee—R. N. Larimer
 Councilor—C. C. Hall
 Councilor—C. H. Cretzmeyer
 Councilor—M. T. Morton
 Councilor—W. L. Downing
 Councilor—E. F. Beeh
 Councilor—H. A. Housholder
 Councilor—C. A. Boice
 Councilor—E. B. Howell

The Speaker: The Speaker recognizes Dr. Flocks.

Dr. R. H. Flocks: In accordance with the spirit outlined in the official call which was sent to all members of the Society, and to conform with the Constitution and the By-laws, I would like to *move* that the House of Delegates be adjourned temporarily and that we declare this a general session so that everyone here may hear the President's and President-Elect's addresses.

Dr. J. D. Conner: I *second* that motion.

The motion was put to a vote and was carried unanimously.

The Speaker: The Chair recognizes Dr. Whitaker.

Dr. B. T. Whitaker: It is with a great deal of regret that I announce the death of Dr. Bush Houston yesterday afternoon. He was one of our Vice Presidents. I *move* that a Committee on Resolutions be appointed to write an appropriate resolution.

Dr. T. F. Thornton: I *second* the motion.

The motion was put to a vote and was carried unanimously.

The Speaker: The Committee on Resolutions will be appointed at a later time. Since we are adjourned as a House of Delegates by the motion that was passed, it is my pleasure at this time to introduce to you the President of the Iowa State Medical Society, Dr. Thomas F. Thornton, who will give his Presidential Address. Dr. Thornton.

[President Thornton read his address.]

Secretary Phillips: Members of the House of Delegates, it gives me pleasure to introduce Dr. Donald C. Conzett, of Dubuque, President-Elect.

The Speaker: If members of the press are here this morning, I would ask that these remarks be listed as off the record.

[President-Elect Conzett read his address.]

The Speaker: Gentlemen, we will go back now to the meeting of the House of Delegates, without the necessity of a further motion.

Secretary Phillips: Mr. Speaker, I *move* that the reports of officers and committees be accepted as published in the Handbook.

The motion was severally seconded, put to a vote and carried.

Reports of Officers

REPORT OF THE SECRETARY

House of Delegates, Iowa State Medical Society:

Herewith is the secretary's report for the year 1950:

MEMBERSHIP

The membership record of each county will be found in the tabulated forms on the following pages. We

gained 35 members in the year and lost 47 by death. Total number of members reached 2,519. Of these 202 were life members and 126 were either men in service or residents whose dues were waived. Paying members numbered 2,191. There are seventy physicians in Iowa who for one reason or another do not belong although they are eligible for membership; there are 39 who are ineligible for membership. There are also 116 who are not members either because they have retired or are not in private practice. Ninety-seven per cent of the eligible physicians are members of the Society.

ONE HUNDRED PER CENT COUNTIES

This year 62 county societies were one hundred per cent in membership. They are as follows:

Adams	Des Moines	Madison	Scott
Appanoose	Emmet	Mahaska	Shelby
Audubon	Floyd	Marion	Sioux
Black Hawk	Greene	Marshall	Story
Boone	Grundy	Mills	Tama
Buchanan	Hamilton	Monona	Taylor
Buena Vista	Hancock-	Monroe	Union
Butler	Winnebago	Montgomery	Van Buren
Carroll	Hardin	Muscatine	Wapello
Cerro Gordo	Henry	O'Brien	Warren
Chickasaw	Humboldt	Osceola	Washington
Clarke	Ida	Page	Wayne
Clay	Kossuth	Pocahontas	Webster
Dallas-Guthrie	Lee	Poweshiek	Winneschiek
Davis	Louisa	Ringgold	Worth
Delaware	Lucas	Sac	

1950 MEMBERSHIP RECORD

County	Members	Eligible	Ineligible	Not in Practice	
				or Retired	Pctge.
Adair	7	1	..	..	88
Adams	5	..	..	..	100
Allamakee	9	1	..	..	90
Appanoose	12	1	..	2	92
Audubon	5	..	..	..	100
Benton	18	1	..	..	95
Black Hawk	86	2	2	1	98
Boone	22	..	..	..	100
Bremer	19	..	..	..	100
Buchanan	13	2	2	..	87
Buena Vista	18	..	..	..	100
Butler	10	..	..	..	100
Calhoun	19	..	..	1	100
Carroll	25	1	1	..	96
Cass	13	0	1	1	100
Cedar	7	1	..	2	88
Cerro Gordo	57	..	..	2	100
Cherokee	12	2	2	3	86
Chickasaw	14	..	..	..	100
Clarke	5	..	..	..	100
Clay	13	..	..	1	100
Clayton	14	3	..	5	82
Clinton	47	2	3	1	96
Crawford	7	5	..	2	55
Dallas-Guthrie	30	..	1	1	100
Davis	14	..	..	..	100
Decatur	8	2	..	..	80
Delaware	10	..	..	3	100
Des Moines	40	..	1	1	100
Dickinson	7	1	..	..	88
Dubuque	63	3	..	1	96
Emmet	13	..	..	..	100
Fayette	23	4	..	1	85
Floyd	15	..	..	1	100
Franklin	12	1	..	1	92
Fremont	10	1	..	..	91
Greene	20	..	..	1	100
Grundy	12	..	..	..	100

County	Members	Eligible	Not in Practice		Pctge.
			Ineligible	or Retired	
Hamilton	15	..	1	..	100
Hancock-Winnebag	20	..	..	1	100
Hardin	20	..	1	3	100
Harrison	9	4	1	1	69
Henry	16	..	1	1	100
Howard	8	1	..	..	89
Humboldt	10	..	..	..	100
Ida	8	..	..	1	100
Iowa	11	1	..	..	92
Jackson	16	1	..	..	94
Jasper	19	3	..	..	86
Jefferson	12	1	..	..	92
Johnson	213	6	..	6	97
Jones	12	3	..	..	80
Keokuk	11	1	..	2	92
Kossuth	17	..	2	1	100
Lee	37	..	1	1	100
Linn	124	3	1	5	98
Louisa	5	..	..	1	100
Lucas	11	..	..	1	100
Lyon	5	1	..	..	83
Madison	6	..	..	..	100
Mahaska	21	..	..	1	100
Marion	21	..	..	9	100
Marshall	42	..	..	1	100
Mills	7	..	..	1	100
Mitchell	14	1	..	2	93
Monona	13	..	..	1	100
Monroe	9	..	..	1	100
Montgomery	16	..	..	..	100
Muscatine	21	..	2	..	100
O'Brien	18	..	..	1	100
Osceola	11	..	..	..	100
Page	28	..	2	1	100
Palo Alto	15	1	..	..	94
Plymouth	13	3	..	1	81
Pocahontas	9	..	1	1	100
Polk	309	3	4	9	99
Pottawattamie	68	1	..	5	99
Poweshiek	16	..	..	..	100
Ringgold	7	..	..	..	100
Sac	13	..	..	..	100
Scott	99	..	3	6	100
Shelby	9	..	..	1	100
Sioux	17	..	..	..	100
Story	41	..	1	1	100
Tama	16	..	..	1	100
Taylor	6	..	..	..	100
Union	14	..	..	..	100
Van Buren	6	..	1	1	100
Wapello	51	..	1	3	100
Warren	8	..	..	1	100
Washington	21	..	..	1	100
Wayne	9	..	..	1	100
Webster	53	..	..	..	100
Winneshiek	13	..	..	2	100
Woodbury	122	2	3	6	98
Worth	5	..	..	..	100
Wright	19	..	..	3	100
Total	2519	70	39	116	97

NUMBER OF ONE HUNDRED PER CENT COUNTIES BY DISTRICTS			
First	3	Sixth	6
Second	6	Seventh	2
Third	6	Eighth	8
Fourth	5	Ninth	8
Fifth	6	Tenth	7
Eleventh	5		

AMA DUES

Collection of AMA dues has now become an integral part of the secretary's office and he is responsible for forwarding them to Chicago. Most of the counties collected both state and AMA dues at the same time and remitted both to us. In those instances it was an easy matter to keep a record of both memberships and to forward the proper amount to the American Medical

Association. When physicians did not pay their AMA dues at the same time they paid state dues, much extra effort was entailed.

LOCATION OF NEW PHYSICIANS

The work of trying to procure physicians for rural areas proceeded as usual during the first six months of 1950. After the first of July, however, it became difficult to make much progress because of the uncertainty of whether physicians would be allowed to locate or would be called into service. We are still keeping a file of the communities wishing physicians and are referring all such communities to the notice of doctors looking for a place in which to practice.

DISTRICT MEETINGS

The secretary's office was very busy during the late summer and early fall in arranging for the district meetings. Local arrangements were made and invitations were mailed from this office.

GRIEVANCE COMMITTEE

Most of the preliminary study on the grievance committee was done in the secretary's office. Plans in effect in other states were studied and then four meetings were held to discuss what would be best for Iowa. Result of that consideration was the formation of the grievance committee at the Burlington meeting.

ANNUAL MEETINGS

The centennial meeting held in Burlington in April was successful from many viewpoints. Planning for it consumed about two years' time. It is always more difficult to hold a meeting outside Des Moines because of the many details involved, but with the excellent cooperation of the Burlington physicians and business establishments, it was possible to hold a most satisfactory meeting.

Plans for the Sioux City meeting in 1951 were started in 1949. Preliminary visits to view the auditorium were made and arrangements were made with the various hotels and some business firms who will aid in aspects of the meeting.

NATIONAL EDUCATION CAMPAIGN

The National Education Campaign was worked into the scheme of things in Iowa in 1950 with very little difficulty. Previous cooperation made it easy to integrate the program into the activities of various committees, particularly the Woman's Auxiliary.

FINANCIAL STATEMENT

All funds due the State Society have been collected by the secretary and turned over to the treasurer. His report will follow.

ALLAN B. PHILLIPS, *Secretary.*

REPORT OF THE TREASURER

The cash on hand at the first of the year showed \$314.29 in the secretary's account, \$3,630.70 in savings, and an overdraft of \$5,512.14 in the treasurer's account. Bonds amounted to \$49,500 or a total net worth of \$47,932.85.

The accounts at the end of the year showed a balance of \$1,000.24 in the secretary's account, \$759.48 in the savings account, and an overdraft of \$8,036.45 in the treasurer's account. Bonds amounted to \$41,500.00, being composed of \$14,000 in Treasury Bonds and \$27,500

in United States Savings Bonds, Series G. The net worth of the Society as of January 1, 1951, was, therefore, \$35,223.27.

INCOME

Annual Session	\$ 6,459.50	
Dues	54,002.50	
Interest on bonds	2,095.00	
Interest on savings	75.86	
Journal		
Advertising	\$14,854.35	
Reprints	1,709.01	16,563.36
Medical Service and Public Relations	1,972.38	
Speakers Bureau	844.20	
Miscellaneous	1,644.01	
American Medical Association dues collected		37,174.75
TOTAL INCOME	\$120,831.56	

EXPENDITURES

Administrative Miscellaneous	\$ 4,013.63	
Annual session	7,306.76	
Council	987.98	
County Society services	82.98	
General Salaries	18,167.25	
Journal		
Salaries	\$ 3,662.55	
Printing and engraving	18,062.24	
Reprints	1,555.98	23,280.77
Legislative committee	5,400.00	
Medical service and public relations	16,184.75	
Other committees	9,963.43	
Rent and office supplies	4,905.70	
Speakers' Bureau	4,214.05	
Trustees	742.74	
Taxes	1,116.35	
American Medical Association dues forwarded		37,174.75
TOTAL EXPENDITURES	\$133,541.14	
NET LOSS FOR YEAR	\$ 12,709.58	

N. BOYD ANDERSON, *Treasurer*.

REPORT OF THE BOARD OF TRUSTEES

Twice during 1950 the Board of Trustees reported to the House of Delegates on the financial condition of the Society and asked if the House wished to curtail any of the activities currently contemplated. On January 15, 1950, the House in a special meeting recommended that the activities be continued, that dues for 1951 be set at \$50 rather than \$25, and that a general manager be appointed to coordinate the various activities of the Society and to represent the Society in its contacts with lay organizations.

In line with this recommendation, the trustees employed Dr. R. D. Bernard to start work on June 1. He was directed to serve ex-officio as a member of every committee and thus coordinate their activities. He was also directed to act as official representative of the Society in dealing with other agencies unless some other physician had been specifically designated to do that.

During the fall months the trustees reported to the members of the Society through the medium of meetings held in each of the eleven councilor districts. Charts and graphs showing Society activity and expense were presented and a full statement of the financial condition of the Society was given at each meeting. It is unfortu-

nate that attendance at some of the meetings was poor. Expense of conducting them was considerable and those who did come seemed to feel they were definitely worthwhile.

FINANCIAL STATEMENT

The original budget of the trustees showed an anticipated deficit of \$25,620 for the year 1950. The actual deficit was about half that, or \$12,709.58 to be exact. This reflects the economies effected by the trustees, together with the fact that our income from dues exceeded our estimate by \$3,902.50, and miscellaneous income was \$1,344.01 more than expected. Expenses were held to a minimum wherever possible. The Journal had been given an allowance of \$8,100 from dues but it used only \$6,717.41. The annual session cost more than anticipated, showing a deficit of \$847.26. It is more expensive to hold a meeting outside Des Moines than in, and on top of that we limited the exhibit space at Burlington by holding the sessions in space that might have been used for income. This is not to be begrudged, since the centenary was most successful from all other viewpoints.

The Speakers Bureau cost more than expected but other departments had lesser costs. Among them were medical service and public relations, administrative miscellaneous, rent and office supplies, general salaries, county society services and medicolegal committee. Those exceeding their budget were the trustees and council whose travel expense was greater because of increased activity; and other committees, due to higher cost of the centennial volume than had been planned. Taxes ran at approximately the budget figure.

During the year the Society had \$8,000 in bonds come due and it received interest amounting to \$2,170.86. This money was put in the general account and used for running expenses.

There was an overdraft of \$1,567.15 at the beginning of the year in our bank accounts, and an overdraft of \$6,276.73 at the end of the year. This overdraft, together with the expenditure of capital funds, made up a net loss for the year of \$12,709.58, bringing the surplus down to \$35,223.27. It is hoped that in 1951 some of this will be replaced.

The trustees have been criticized for some curtailments, naturally. We placed a limit on travel expense for delegates to the American Medical Association and we eliminated an expense of about \$400 a year we had been granting the Veterans Administration. Since this benefitted only the area around Des Moines, it was eliminated in order to cut expenses. Both of these curtailments have drawn some fire, probably due to ignorance on the part of those responsible.

The board has given a great deal of study to what may happen in 1951 and it would like to pass on to the House of Delegates its view of income and expenditure.

First of all, we realize some of our members may be called into service. Their dues will be waived if the county society initiates the procedure. This was done during World War II when over 900 physicians were in service, and it means that income may be curtailed rather severely. We have about 200 life members who do not pay dues, and we will probably add about 50 more in April. Figuring these things, the trustees estimated that there will be about 1,800 dues-paying members which would mean an income of around \$90,000 for the year.

Breaking this down, they felt the Speakers Bureau should bring in \$1,200, that the annual session should

break even, that the Journal should bring in \$17,400 as an offset to an expense of \$24,600, and that miscellaneous income should be in the neighborhood of \$750.00.

Net cost of the Journal to Society members under the above figures is estimated at \$7,200; Speakers Bureau at \$3,000; medical service and public relations was given a budget of \$26,700; administrative miscellaneous \$6,600; rent and office supplies \$4,800; general salaries \$15,420; county society services \$6,000; trustees \$900 and Council \$1,200 for travel expense; medicolegal committee \$1,620; legislative committee \$6,600; other committees \$4,800; and taxes \$1,800.

With this budget a surplus of \$3,360 is anticipated but every effort will be made to hold expenses even lower than these estimates if possible.

SPECIAL DUES

The trustees feel that dues should be waived for physicians going into service. They also feel that possibly special consideration should be given to older physicians who are not 100 per cent active, who feel that they cannot afford \$50, but would like to remain in good standing. Is it judicious to handle such cases on their individual merits, and would the House of Delegates recommend that the trustees use their judgment about lessening the amount of dues for such men?

JOURNAL

Now for a statement of what has been done about specific things. The Journal is not self-supporting. The cost of printing and of paper stock has risen steadily since the war, but the revenue from advertising is bound by certain restrictions. The cost of advertising in our Journal is far greater per reader than in the national journals. It was brought out at a recent meeting of the State Journal Advertising Bureau at Cleveland that it was about ten times as great. For that reason we cannot increase our cost per page of advertising and hope to hold the firms which now deal with us.

There is, however, the possibility of obtaining more local advertising and the trustees have requested Dr. Bernard and Don Taylor to be responsible for procuring at least \$1,200 of such advertising in 1951.

In order to cut the cost of publishing the Journal, the contract has been let to a different concern, one which has had a great deal of experience with other medical journals and is competent to give us a good publication. A change has been made in the personnel, with the scientific editor and his editorial committee to be responsible for the scientific end of the Journal, the managing editor to be responsible for the economic and reportorial part, and the business and advertising managers to be responsible for procuring more income.

OFFICE SPACE

The trustees have reported to you on the need for more office space. This need is still acute. There is no doubt but what the office personnel could function more efficiently if it had more elbow room. Machines which should be in the work room have had to be brought into some of the office for lack of floor space in the work room. Storage of old records and new supplies presents a constant problem.

It would have been possible to obtain adequate space in another building, but the cost of remodeling it to suit our requirements, together with the additional rent entailed by fifty per cent more space, would have doubled the figure we are now paying. With conditions as

uncertain as they are at the moment, we hesitated to assume this cost and for the moment are continuing in our present location. We hope, of course, that some solution will appear before long.

NEW EQUIPMENT

New equipment costing around \$2,000 has been purchased and part of it has been received. The biggest expenditure was for a new addressograph. The old one served for 15 years. It was a special type requiring special equipment. With the prospect of a freeze on the manufacture of equipment of this type, we felt it the part of wisdom to replace this particular bit of machinery. In doing so, we ordered the standard machine for which parts are more easily obtainable. We also purchased special attachments which will mean a great saving in labor costs on addressing Journal envelopes and making lists of members.

One electric typewriter was purchased for the stencil work in the office. It produces a better job than the regular typewriter with much less effort on the part of the operator. Two other typewriters were also traded in on new models, so that we are well supplied for several years to come.

PENSION PLAN

The board has wanted to establish a pension plan for the lay employees and has given a good deal of time and thought to various methods by which this might be done. With the financial condition of the Society still in a somewhat precarious condition, however, the board has deemed it advisable to delay action for the time being.

LEGAL COUNSEL

It has seemed wise to consult legal counsel frequently in the last year when so many problems confronted us. No budget was set up for this in 1950, but funds have been allocated for it in 1951. This is a precautionary measure of which we feel all members will approve.

BALDRIDGE-BEYE LOAN FUND

There have been many inquiries about loans for medical students in the past few years. With them has gone a public demand that more medical students be trained. Surveying the problem, the trustees found that the Baldrige-Beye award was not being utilized and so, after due deliberation, decided to allot \$1 from dues for each paying member to set up a loan fund in the names of Dr. Baldrige and Dr. Beye. Announcement of this has been made and it is hoped the fund may be utilized to good advantage during the year.

GENERAL MANAGER

The general manager has had a busy seven months since taking over his duties. He attended all of the district meetings in the fall; has attended all committee meetings; has done a good deal of investigative work on the television program being contemplated; has been active in working with many lay organizations on health matters; and in addition has given much time and thought to society activities and functioning of the office. He submits monthly reports to the board of trustees so that they may be fully informed of his activities.

GRIEVANCE COMMITTEE

The grievance committee which was authorized by the House of Delegates in April has had an active nine months. Seven meetings have been held in that time.

When the committee was organized, it was given all of the cases which had accumulated in the central office. These it has solved and in addition it has received and settled others and is now in the process of investigating and reconciling current complaints. The House of Delegates might be interested to know that the committee expense to January 1, 1951, amounted to \$912.44. The committee will probably cost the Society in the neighborhood of \$1,800 a year but the trustees feel this is money well invested which will more than be repaid in good will and better public relations.

THE FUTURE

There will always be some physicians who object to higher dues and others who see no need for them. The trustees have no wish to decide whether it is wise to carry on all of the activities of the Society. Their function is to handle the finances of the Society to best advantage. The demand for increased activity from the central office has not been generated by the employees nor by the trustees but rather has come from the rank and file of the membership. More and more the members are asking the central office for more assistance and for greater activity along many lines.

We as trustees of the Society's funds ask you once again whether you have any directives to issue us on Society activities. If you wish to reduce dues in 1952, you must tell us where you wish us to cut the services you are now asking. If you feel we should continue much as we are, meeting the needs as they arise, waiving the dues for those who leave their practice and go in service, exempting life members from dues, then we must recommend that dues for 1952 be kept at \$50.

Respectfully submitted by:

B. T. WHITAKER, *Chairman*,
R. N. LARIMER,
L. A. COFFIN.

REPORT OF THE COUNCIL

During the past year the Council has held six meetings. Each of these sessions was attended by a quorum. Meetings were held on the following dates: April 26 at Burlington, and July 19, September 7, November 30, December 20, and January 25 at Des Moines.

During 1950 the following Councilors resigned: Dr. L. L. Carr of West Union (District I), Dr. J. G. Macrae of Creston (District X), and the late Dr. William S. Reiley of Red Oak (District XI). The vacancies in Districts X and XI have been ably filled by Doctors I. K. Sayre of St. Charles and Oscar Alden of Red Oak, and District I by Dr. C. C. Hall of Maynard.

District meetings were held throughout the state in the early fall of 1950. Generally these were poorly attended with only about 13 per cent of the members present. It is the present feeling of the Council that future district meetings should be partially scientific in nature if adequate attendance is to be had.

The Council has conferred with various committees during the year in assisting to outline and coordinate their work. First, the legislative committee. A bill has been prepared for introduction into the present legislature, the purpose of which is to permit counties to vote for the establishment of health units. This bill has required a considerable amount of work. One member of the Council attended a meeting of the Iowa Health Council and presented the view of the physician. Later he met with the society attorney and the chairman of the legislative committee. The bill was thoroughly discussed

and specific recommendations made, most of which have been accepted and incorporated in the bill which is to be introduced in the legislature in the near future.

Dr. Galinsky of the Tuberculosis Committee discussed with the Council the work of his committee and it was recommended that efforts be made to coordinate the activities of the State Medical Society, the State Tuberculosis and Health Association, and the State Health Department, Tuberculosis Division.

Considerable time has been given to discussions with the Board of Medical Examiners concerning the special licensure of displaced physicians and it is the recommendation of the Council that no physician be admitted to examination in Iowa unless he is a citizen of the United States. Our own boys must spend eight or nine years in preparation for a medical career and the Council feels that all applicants should be trained alike. The Council has recommended that the Enforcement Division of the State Health Department be very active in prosecuting any unlicensed practitioner who may be in the state and has promised full cooperation with that Division. The Council also recommends that all residents in Iowa hospitals be required to have Iowa licenses.

The Council has approved a survey of the state to determine the number of persons suffering from cancer. This survey will be conducted by the National Cancer Institute in cooperation with the State Society offices. Questionnaires will be sent to all doctors and hospitals in the near future. The Council has also approved a survey of the physicians of the state to determine as far as possible the need for more general practitioners in smaller communities. The Council has given considerable attention to the training of more general practitioners by the University Medical School. The Council has also advised with the Cancer Division of the State Department of Health as to the need for more cancer education and advised concerning the showing of a film to women's groups emphasizing the need for early diagnostic action.

The Council has further considered the set-up of the State Board of Social Welfare, bearing in mind the possibility that we may be called upon to help administer the medical phase of the work. Before such a move can be made there must be some change in legislation. This will be considered.

Mr. Myers, our attorney, has discussed with us the doctor-pharmacist relationship, giving a full description of the regulations now enforced. Mr. Myers has also prepared a brief stating what authority hospital boards of trustees possess and the procedure they should follow in setting up standards for membership on hospital staffs so as to make the hospital eligible for approval.

The Council voiced by resolution its disapproval of lay health agencies spending their money for any purposes other than that for which the subscribers have given it. Dr. Ferguson of Newton explained in considerable detail the set-up for emergency medical care and called attention to the measures which will be necessary if such a program is to function in Iowa. It should cover organization of hospitals, doctors, ambulances and whatever else may be needed to care for large numbers of injured or sick persons.

Considerable discussion ensued relative to the conduct of postgraduate courses. Many of them have been unsatisfactory from different angles and a letter has been prepared which will be sent to any county which is contemplating putting on such a course. Many of the difficulties have probably arisen from misunderstand-

ings, and a special effort will be made to prevent them in the future.

The Council further recommended to the Board of Medical Examiners that no temporary licenses be granted for the practice of medicine in Iowa.

The Council fully realizes that the State Society is not in status quo. Conditions, political and otherwise, are continually arising which demand an opinion from the Iowa profession, and the Council fully realizes its duty and responsibility in acting in the interest of the general practitioner of Iowa to the best of its ability.

It appears to the Council that conferring thus with the various committees can be productive of much good and so will be continued.

Respectfully submitted,

OTIS D. WOLFE, *Chairman*,

C. A. BOICE, *Secretary*.

REPORT OF THE FIRST COUNCILOR DISTRICT

Because of Dr. Carr's resignation as Councilor for the First District and my appointment on January 23, 1951, the report from the district will necessarily be somewhat incomplete due to lack of time. I am deeply appreciative of the response from the deputies whose reports follow and I pledge myself to active participation in Council matters and their transmittal to my county members.

C. C. HALL, *Councilor*.

Allamakee County. The Allamakee County Medical Society held one meeting in 1950, with six physicians present, or 66 per cent. All physicians in the county except one are members. We participated in the tuberculosis and immunization programs and in the crippled children's clinic at Decorah. No postgraduate courses were given in the county.

There has been a great improvement of hospital facilities in the county by the opening of the new Veteran's Memorial Hospital in Waukon. It has 26 beds with very modern equipment and facilities. The Postville Hospital also furnishes effective service to that area. We have no Woman's Auxiliary.

J. W. THORNTON, *Deputy Councilor*.

Bremer County. The Bremer County Medical Society held two meetings with 75 per cent of the members attending. All of the physicians in the county are members of the society. We participated in the tuberculosis case-finding program. No postgraduate courses were held. We have two hospitals in the county, one at Waverly and one at Sumner. We have no Woman's Auxiliary.

F. R. SPARKS, *Deputy Councilor*.

Chickasaw County. We held one meeting during the year with nearly all members present. We have a perfect membership record. The members cooperated in all health activities such as tuberculosis case-finding, immunization programs, crippled children's clinics, etc. We had no postgraduate course. Our hospital facilities are adequate for our people.

P. E. GARDNER, *Deputy Councilor*.

Fayette County. We had no medical society meetings during the year but let the staff meetings of Mercy Hospital at Oelwein take their place. These are held monthly. All of our doctors participated in the public health programs held in the county, and we had a postgraduate course during the fall which had an average attendance

of 24. We have two hospitals, one at Oelwein and one at West Union now in the process of construction.

C. C. HALL, *former Deputy Councilor*.

Howard County. The Howard County Medical Society held two meetings during 1950, with an average attendance of 86 per cent. Eighty-six per cent of the physicians in the county are members of the society. No new doctors have located here during the year, nor were there any deaths. We lost two doctors who moved away: Dr. F. E. Giles went to Iowa City and Dr. C. W. Ahl to Douglas, Arizona.

Doctors individually participated in a number of health activities, including the examination of grade school and high school students, immunization, tuberculosis case-finding, and reference of patients to the crippled children's clinics. Several doctors attended postgraduate courses in other counties.

Hospital facilities within the county are generally good. St. Joseph Mercy Hospital in Cresco has 34 beds and ten bassinets and it is well staffed and equipped. There is a small hospital in Elma of six or eight beds which seems to handle satisfactorily the situation in that community. We have had no active Woman's Auxiliary.

P. A. NIERLING, *Deputy Councilor*.

REPORT OF THE SECOND COUNCILOR DISTRICT

The Second Councilor District held a meeting at Mason City that was very well attended and I think it was profitable to all who were there. The speakers included the president, chairman of the board of trustees, president of the Woman's Auxiliary, chairman of the legislative committee, and the general manager.

Things are moving along in the Second District in a medical way. Some of the doctors have died; others have come into the territory.

The accompanying deputy councilor reports will give the details of the various component societies. Only two counties, Franklin and Worth, failed to report. All in all, everything seems to be under control.

C. H. CRETZMEYER, *Councilor*.

Butler County. Butler county held nine meetings with an average attendance of about 75 per cent of the members. Our membership is 100 per cent. One doctor moved into the county during the year, Dr. J. H. Ackerman of Clarksville.

The society participated in the cancer work and the crippled children's clinic. Members attended the Speakers Bureau lectures at Charles City. We have no hospital facilities in the county.

BRUCE ENSLEY, *Deputy Councilor*.

Cerro Gordo County. The Cerro Gordo County Medical Society holds nine meetings per year, one per month except during the summer three months. The average attendance during 1950 was approximately 42 members plus four to six guests.

One hundred per cent of the practicing physicians in Cerro Gordo County are members of the county medical society. Two who are retired from practice do not belong. They are Dr. J. F. Meany of Rockwell and Dr. J. E. MacDonald of Mason City. Five new physicians have located in the county during the year; none have died; and three have left the county to go into practice in other sections of the country.

The county medical society has a committee which

cooperates with the Cerro Gordo County Tuberculosis Association, whose executive committee has two practicing physicians among its membership. Every year a preschool immunization campaign is carried on by the county medical society, offering immunization and health examinations at a reduced rate. This has been done for many years. Two of the physicians of the society are members of the Iowa Crippled Children's Local County Organization. The Society has cooperated with crippled children's clinics held under the auspices of the Iowa City organization.

The Iowa Tuberculosis and Health Association held a chest institute in Mason City in October for the benefit of this and surrounding counties. The attendance was approximately fifty.

There are two hospitals in Mason City, Park Hospital with approximately 70 beds and St. Joseph's Mercy Hospital with approximately 225 beds in actual use. Some kind of a hospital bed is virtually always available for emergency.

Cerro Gordo County Medical Society does not have a Woman's Auxiliary.

The Society has attempted to take an active interest in all matters in the community in which the practice of medicine is directly involved.

L. W. SWANSON, *Deputy Councilor.*

Hancock-Winnebago Medical Society. During the past year the Hancock-Winnebago medical society had only two meetings, with an average attendance of about ten. I think all of the active physicians in the two counties are members of the society. There have been two doctors from Winnebago county who have left for service: Dr. S. R. Camp of Thompson and Dr. J. T. Mangan of Forest City.

There has been both a tuberculosis campaign and a crippled children's clinic in the county during the year. We have only one hospital in the two counties, the Municipal Hospital at Forest City. The Woman's Auxiliary has not been started in this area.

C. V. HAMILTON, *Deputy Councilor.*

Humboldt County. The Humboldt County Medical society report is as follows:

Three meetings were held and the average attendance was seven. There are a total of 10 members, 100 per cent for this county.

One new member located in this county in 1950. Dr. James K. Martins moved to Bode from Waterloo. He took over the practice of Dr. Cloyce Newman, who went to Topeka, Kansas, late in 1949.

Our society conducted preschool examinations and immunization of all children in the county who started kindergarten last September. We also sent patients to the crippled children's clinics which were held in Algona and Webster City. A county tuberculosis survey and chest clinic was held in this county.

The prospect for a county hospital here received a blow in November when an additional \$100,000 bond issue was defeated by 62 votes. A previous bond issue of \$100,000 and gifts of over \$50,000 are thus left idle until additional funds are obtained.

IVAN T. SCHULTZ, *Deputy Councilor.*

Kossuth County. The year of 1950 will always be remembered in the minds of the physicians of Kossuth County. It was our first year with a modern hospital. Never before were we able to enjoy the use of such.

All of our meetings were held in the staff room of St. Ann Hospital on the evening of the third Tuesday of

each month. The attendance averaged about 75 per cent of our membership.

Dr. Robert Lee left Algona to be replaced by Dr. Dan Bray, while Dr. Horton joined our ranks in mid-summer.

We are looking forward to a postgraduate course later this winter.

J. G. CLAPSADDLE, *Deputy Councilor.*

Wright County. The Wright County Medical Society has a membership of eighteen, two of whom are life members. There is only one physician in the county who is not at present a member of the county society. He, having recently moved to this county, is soon to be affiliated, giving the county a 100 per cent membership among its physicians.

During the year of 1950, the society held seven meetings of which six, through the cooperation of the Speakers Bureau of the State Medical Society, were highlighted by guest speakers. A variety of topics was discussed by the various speakers, all of great interest to the general practitioner. The attendance varied, but an average of fifteen was present at each of the meetings.

During the year there were no deaths among the physicians in Wright County. Dr. D. K. Bengé of Dows, who has applied for a commission in the Armed Services, will leave for active duty some time during the first part of 1951.

The Wright county society has been active in a variety of health activities. Under the guidance of a full time county nurse, a very thorough tuberculosis program has been in progress throughout the year. In every town in the county a school immunization program was carried out. Many of the crippled children in Wright county were seen at the crippled children's clinic held at Webster City in September.

At the present time there is only one hospital in Wright County, the Steele Memorial Hospital at Belmond. A new hospital is under construction at Clarion. This hospital is federally sponsored and is to have a bed capacity of twenty-five patients. Fifty per cent of the construction work has already been completed, the total cost of construction and equipment to be \$300,000.00. Final plans for a new twenty-five bed community hospital in Belmond are being completed. It is anticipated that bids for construction of the community hospital will be let in February of 1951.

There is no Woman's Auxiliary in this county.

Officers for 1951 are Glenn J. Hruska, president, D. K. Bengé, Dows, vice president and John R. Christensen, Eagle Grove, secretary-treasurer.

S. P. LEINBACH, *Deputy Councilor.*

REPORT OF THE THIRD COUNCILOR DISTRICT

I am pleased to report that the Third Councilor District has accomplished a great deal in the campaign against socialized medicine and has no patience with any program which might by some legislative mistake suddenly loom on the horizon as another "foot in the door" attempt to socialize our profession. For that reason we are still suspicious of the contemplated county and multi-county health legislation. Keep the State Board of Health in Des Moines, where it belongs, in an advisory capacity.

All the counties have held meetings, elected officers, and our membership ranks well with the best in the state.

I want to take this opportunity to thank the deputy councilors for their wholehearted cooperation in filling

out the general roster of physicians in their respective counties, and in addition, the prompt report of their local activities.

There was considerable activity of the Auxiliary in several of our counties, especially just before the election. Their help was much appreciated and it was applied where it was needed.

I feel that in the Third District, while there is room for improvement, the year 1950 has been a good one in both scientific progress and perpetuation of organized medicine.

M. T. MORTON, *Councilor*.

Clay County. The annual report of the Clay County Medical Society is as follows:

Meetings are held once a month at the Spencer Municipal Hospital except that during the three summer months no meetings are held unless some special things are to be discussed. The average attendance at the meetings is about twelve.

All of the practicing physicians of Clay county are members of the society. There is one retired physician in Everly, who does not belong. During the past year no new physicians have located in Clay county. There have been no deaths, nor have any physicians left the county.

Clay county has actively participated in all health activities including the tuberculosis program, crippled children's clinic and the immunization program. This past year only the Spencer schools were immunized, as it has been our policy to do a county-wide immunization every two years, but a city immunization every year. The tuberculosis association and heart association put on a program in Spencer in September which was well attended by doctors from many of the surrounding counties.

Hospital facilities in Clay county have been fairly adequate. All of the doctors in the county bring patients to the Spencer Municipal Hospital. The drive to secure funds for the building of the new hospital has terminated successfully and bonds have been let for the construction of the same. The plan is to start construction sometime in the spring.

The Woman's Auxiliary has been active during the past year and again maintained a booth at the Clay County Fair.

C. C. JONES, *Deputy Councilor*.

Dickinson County. Dickinson county has seven physicians in the county. One has retired at the age of 80 and is no longer in active practice. Another, J. J. Buchanan of Milford, has had a spinal fusion and other surgery which will prevent his active practice for six months. The remaining five in the county are active and although only one formal meeting of the society was held, we have had informal discussions and reports from the members as they have returned from state and national meetings.

There is one hospital in the county, equipped for twenty-two beds, four of them obstetrical. This is a privately owned hospital but all physicians in the county may use it.

Our society was host to the Upper Des Moines Medical Society summer meeting at the Inn on Lake Okoboji in August. About 100 physicians from Iowa, Minnesota and South Dakota were present. We sponsor a county-wide diphtheria and smallpox immunization campaign in the schools each year, and in the spring hold a tuberculosis program. All known contacts in the county are given Mantoux tests and all reactors are x-rayed.

Our county also sponsors a clinic for crippled children and we feel we have had very nice results from this.

T. L. WARD, *Deputy Councilor*.

Emmet County. During 1950 the Emmet County Medical Society held six official meetings with an average attendance of eight. We have two new physicians in the county, Dr. J. W. Crossley of Ringsted and Dr. R. M. Turner of Armstrong. Both have joined the society, giving us 100 per cent membership.

All but one of our members belong to the staff of the Holy Family Hospital where monthly staff meetings are held. At these meetings the hospital librarian gives a monthly report of all cases admitted, with progress or death of the patient. In addition, case reports of deaths are made by the attending physician and any unusual case is discussed. The library is also equipped with a projector so that we may show scientific films as desired.

As a society we have wholeheartedly approved and supported the crippled children's clinic and the tuberculosis program. However, we have opposed the "free" immunization program on the basis that it is neither free nor to the best interest of public health or medicine, but rather like an incipient cancer in the body of free medicine.

We have a very modern hospital here but we still need beds and will for some time.

Our usual winter and summer meetings of the Upper Des Moines Medical Society were held with an attendance of 60 per cent of the members. We also had four speakers from the Speakers Bureau. Two of our members attended a postgraduate course at Iowa City and one at Minneapolis.

Our Woman's Auxiliary was organized last year and its activities have been extensive. It sponsored and made Christmas tray decorations for the patients at the hospital, through independent contributions purchased a library cart for the hospital, and supervises its use by obtaining books through the local library and giving twice a week service to patients, and they provided free taxi service during election.

C. S. KIRKEGAARD, *Deputy Councilor*.

Lyons County. We had one meeting in 1950 with an attendance of 80 per cent. The percentage of physicians in this county who are full members is 83 $\frac{1}{3}$ per cent. No new physicians located in the county, none died and one left the county.

The county society has not participated in health activities such as tuberculosis program, immunization, crippled children's clinic, and other activities such as cancer and heart disease. There were no postgraduate courses held in this county and none of the members attended courses in other localities.

There is one hospital, the Rock Rapids Hospital, in the county which is privately owned with 20 bed capacity. There is no Woman's Auxiliary.

We are a very small county and would welcome some plan whereby we might meet jointly with some of the neighboring county societies.

S. H. COOK, *Deputy Councilor*.

O'Brien County. Our society is 100 per cent in membership with 18 physicians. Three meetings were held during the year with an average of ten attending. There was no change in membership status during the year.

We participated in various health activities such as the tuberculosis program, immunization campaign, and crippled children's clinics. We had no postgraduate

course in our county but our members attended one at Cherokee and at Le Mars. The Woman's Auxiliary was not active.

We are fairly well fixed for hospital beds. Sheldon is increasing its bed capacity from 18 to 32 beds. The south half of the county uses the Cherokee hospital, and if the recommendations are met, the hospital at Primghar will be approved.

T. D. KAS, *Deputy Councilor.*

Osceola County. We held monthly meetings during the year which were well attended. The Woman's Auxiliary usually met at the same time with us at the Osceola Hospital in Sibley. Our programs consisted of scientific talks and some movies.

Our membership was 100 per cent during the year, with two life members.

We had no postgraduate courses during the year. Hospital facilities are adequate, the Osceola hospital being fully licensed by the state, well equipped, and with enough beds for the average demand.

F. REINSCH, *Deputy Councilor.*

Palo Alto County. It is my great privilege to report an active and enthusiastic medical society in Palo Alto County. As you know our society composes largely the medical staff of our hospital, and as such meets as a group more frequently than otherwise. However, there have been five meetings of our county society during 1950.

All the physicians in Palo Alto county are members of the society. Three of them are life members of the State Society, and another member is now in the process of being elevated to that honorable degree. You can see the age level of our 15 members is pretty high. Four of our members are of military age, however. These latter make up in activity and enthusiasm so that our society is pretty well balanced.

Members, individually, have cooperated with the tuberculosis activity and the crippled children's clinic as carried out in this section.

Our society has put forth its greatest effort during 1950 in helping to increase the hospital facilities for the county. An addition to the Emmetsburg Hospital which has increased its capacity by twenty beds, has been completed. Space for two operating rooms, x-ray rooms and laboratory is also provided by the addition.

If the increased dues to the State Society and the American Medical Association do not frighten some of our members, I hope we may be able to report a 100 per cent membership for 1951.

H. L. BRERETON, *Deputy Councilor*

Pocahontas County. The Pocahontas County Medical Society held eight meetings in 1950 with an average attendance of 90 per cent. We have ten physicians in the county of whom one is retired, and one ineligible, and eight members in good standing, so that we are one hundred per cent. We cooperated in the immunization and tuberculosis program in conjunction with the county nurse. We held no postgraduate course during the year, but our society is active and the meetings are well attended.

We have no Woman's Auxiliary.

We have only one hospital in the county, the Hoven-den Memorial Hospital at Laurens. Most patients are sent to Fort Dodge.

C. L. JONES, *Deputy Councilor.*

Sioux County. The county society held four meetings with an average attendance of six members. One hun-

dred per cent of the eligible doctors are members. We have no additions during the year and neither have we lost any through death or removal.

The society members participated actively in health activities such as tuberculosis, immunization, and the crippled children's clinics. We had no postgraduate course nor were there any in surrounding counties. Hospital facilities are good.

The Woman's Auxiliary has held four meetings, usually at the same time and place as the county medical society.

WILLIAM DOORNINK, *Deputy Councilor.*

REPORT OF THE FOURTH COUNCILOR DISTRICT

During the past 15 months the councilor has visited all of the county societies in the district and can report that all of the societies are active and have shown increasing interest in local programs as well as the work of organized medicine. In spite of the educational work done in promoting voluntary health insurance, little interest has been shown in Blue Shield. While the profession is active the average layman has shown little interest. General prosperity is no doubt responsible for some of the lack of interest.

When the present hospital construction program has been completed, very satisfactory hospital facilities will be available in the district. To the writer, the most important problem is the securing of new or the additional training of the physicians already in the district as part time specialists in x-ray, surgery, internal medicine and obstetrics to staff these new hospitals. The training of full time specialists is not the answer as such men will rarely locate in the smaller communities in the Fourth district.

Cooperation of the physicians, particularly the county society officers, has been very gratifying to the councilor. The membership at large is definitely well aware of the economic and political problems that confront the profession and increased activity on its part can be expected in the future.

WENDELL L. DOWNING, *Councilor.*

Buena Vista County. The Buena Vista County Medical Society held four meetings during 1950 with 12 of the 19 members in attendance. Six members attended the meetings of the four-county group—Sac, Buena Vista, Calhoun, and Pocahontas. Seventeen physicians are located in the county and all are members of the society. One new physician has located in the county and one death occurred among the members. An immunization program was carried out in Storm Lake in the spring of 1950 and a crippled children's clinic was held in Sac City. A number of the members attended all of the postgraduate courses held in Cherokee. Within the next two or three months the new Community hospital of fifty beds will be opened in Storm Lake providing excellent hospital facilities. Buena Vista county has an organized Auxiliary which has social meetings, but has not been particularly active in other fields.

Most of the members have welcomed the raise in both state and AMA dues and have wondered why they were not increased earlier. To date none of the members have been called into the Armed Forces.

H. E. FARNSWORTH, *Deputy Councilor.*

Carroll County. Meetings of the Carroll County Medical Society are held monthly with an average attendance of 20 members. All of the eligible physicians in the

county are members of the society. One new member was added during 1950. There were no deaths in the membership during the year. Members of the society are active in the Carroll Health Society giving this association their full support. The district meeting of the American Cancer society was held in Carroll during 1950.

A tuberculosis survey was also carried out in 1950 with an x-ray program carried out by the University of Iowa Hospital. An immunization program is carried out by the County Health nurse in conjunction with the doctors of the county. A crippled children's clinic was held for two days at St. Anthony's Hospital with an enrollment of 207.

Carroll County and the surrounding area is served by St. Anthony's Hospital which has a capacity of 150 beds. Complete x-ray service, with a new x-ray unit installed in 1950, is available. The surgical and laboratory units are also complete. The Woman's Auxiliary is not active at the present time.

JOSEF MARTIN, *Deputy Councilor.*

Cherokee County. The Cherokee County Medical Society held 12 meetings at the Sioux Valley Hospital during 1950 with an average attendance of 70 per cent. Local immunization programs were held in the Cherokee and Aurelia schools during the past year. No tuberculosis clinic was held but the society does participate in a program that brings a clinic here about every eighteen months. During the year five indigent patients were referred as suspects and x-ray examinations were made.

In May the Sioux Valley staff entertained about 30 local and regional physicians at a dinner meeting at the Hotel Lewis. Three speakers from Omaha presented papers. In October a postgraduate course was held with four weekly meetings. Speakers were furnished by the Speakers Bureau. About 25 physicians were in attendance at each meeting. Sioux Valley Hospital has been undergoing a remodeling and by March we hope to have this completed. This will increase the number of beds from 30 to 70. Cherokee county does not have an Auxiliary.

CLARENCE E. BRODERICK, *Deputy Councilor.*

Crawford County. The Crawford County Medical Society has shown a gratifying increase in activity during the past year. Eight meetings were held with an average attendance of nine physicians. Eighty per cent of the doctors in the county are members of the society. One new physician located in the county during the year; none died and none left the county. A postgraduate course was held in Denison during September and October and an average of nine were in attendance. In 1949 a county wide tuberculosis survey was made and last year two x-ray followups were held. School immunizations were undertaken twice during the year. The school nurse made a hearing and visual examination of all of the school children during the year. Preschool examinations were held in Denison twice during 1950. Hot noon lunches and lunches of milk are available in the Denison schools. The county also participated in the crippled children's clinic held in Carroll. The county society assisted in the county drives for funds for the various health organizations. The county medical society was reorganized during the year and a staff has been selected for the new Crawford County Memorial Hospital which is scheduled to open for patients in March. This new 50 bed community hospital in addition

to a 22 bed private hospital will provide sufficient hospital facilities.

R. M. JOHNSON, *Deputy Councilor.*

Ida County. The Ida County Medical Society held two meetings during 1950 with an average attendance of seven. There are eight physicians in the county and all are members of the society. No new doctors located in the county and none died during the past year. Most of the members of the society attended postgraduate courses and medical clinics outside of the county during the year. The annual Fourth District meeting was held in Ida Grove in August. Good hospital facilities are available in Ida Grove and Battle Creek and the members make some use of the hospitals in Cherokee and Storm Lake. The Woman's Auxiliary is not organized in Ida county.

M. W. GRUBB, *Deputy Councilor.*

Monona County. The Monona County Medical Society held three county meetings during 1950 with an average attendance of seven members. One hundred per cent of the eligible physicians in the county belong to the society. Two new physicians located in the county during the year, one physician left, and no deaths occurred. A crippled children's clinic was held during the year. No postgraduate courses were held but many of the members attended the lectures held in Woodbury county. Hospital facilities are fairly adequate, and the distribution of medical service is satisfactory. Monona county does not have a Woman's Auxiliary.

C. W. YOUNG, *Deputy Councilor.*

Plymouth County. The Plymouth County Medical Society has had an active year. Eleven meetings were held in conjunction with the meetings of the Sacred Heart Hospital staff. As usual the county meetings were solely business meetings. The average attendance is almost 100 per cent. There are 15 active physicians in the county and the distribution is good, Le Mars has seven, Akron four, Remsen two, and Kingsley two. Two physicians located in the county during 1950, one is to leave soon for service in the Army Air Corps. No deaths have occurred among the members. Seven of the members who have practiced over forty years were honored at a dinner in November. The society has been active in the health programs with a member assigned to each group.

No postgraduate courses were held during the year, but attendance of the members at the Cherokee course and the Woodbury county meetings has been good. Hospital facilities are good with a 68 bed hospital in Le Mars and a new community 25 bed hospital about complete in Akron. This hospital was constructed entirely with local funds. The county has no Auxiliary but has members at large in that organization. A number of talks have been given to lay groups on socialized medicine and voluntary health insurance. The society has a satisfactory contract with the county to render care for the indigents.

H. L. VAN DER STOEP, *Deputy Councilor.*

Sac County. The Sac County Medical Society held 12 meetings during 1950 with an average attendance of about 75 per cent. All physicians in the county are members of the society. One new member was added during the year and one member was lost by death. Immunization programs were carried out in the schools during the year. Most of the members attended postgraduate courses in Cherokee and Denison and the crippled chil-

dren's clinic held in Carroll was participated in by the county.

The new Loring Memorial Hospital was opened September 20. It is a 33 bed, modern, well equipped hospital, and is proving very adequate in serving the local hospital needs.

C. E. LIERMAN, *Deputy Councilor.*

Woodbury County. Ten monthly meetings were held in Sioux City during 1950 with an average of 60 physicians in attendance. All of the eligible physicians are members of the Society; this is about 95 per cent of the doctors in the county. Four new members were added to the society during the year. Two members left the county and there were four deaths. The county society takes an active part in all health activities such as the tuberculosis program, immunization programs and crippled children's clinics. Immunization is carried out in certain schools each spring. We have made good strides in handling our tuberculosis patients by having an active clinic and an active intermediate Tuberculosis hospital which is staffed by members of the society. There has been set up in one of our schools a service to care for the crippled children resulting from the polio epidemics of the past few years. This has been endorsed by our orthopedic surgeons and the children are carefully watched, inspected and treated. I feel there shall be some grateful results coming from this clinic.

Two postgraduate courses were held in the county during the year, one through the Iowa Heart Association and the other under the Iowa Cancer Society. Both were excellent meetings with four top physicians furnishing a profitable program. Approximately 100 physicians attended each meeting. We have felt that we should have more of this type of institute.

Sioux City has four active hospitals with a total of 650 beds. They are all full at the present and it is difficult to find beds for patients. St. Josephs Hospital has a \$3,000,000 addition under construction which should relieve some of the pressure in the present emergency situation. The Woman's Auxiliary is as usual very active and is at present making plans for the annual meeting of the state society. The Woodbury county society extends to all of the members of the state society an invitation to visit Sioux City and attend the annual meeting in April. There has been little or no adverse comment relative to the cost to the members of the increased dues to the state or AMA. All members seem very willing to support in any way they can the activities of organized medicine.

D. B. BLUME, *Deputy Councilor.*

REPORT OF THE FIFTH COUNCILOR DISTRICT

The Boone County Medical Society had a membership of 19 physicians at the close of the year. This was 100 per cent of the eligible physicians in the county. During the year of 1950 the society suffered the loss of two of its long time members when Dr. Maurice Healy of Boone, and Dr. J. O. Ganoe of Ogden passed away. We also lost one member late in the fall of 1950 to the armed services when Dr. F. N. Johnson of Madrid joined the Army Air Force. There were no new members during the year.

The society met at least once a month throughout the year for a dinner and scientific program. Most of these meetings were held in the form of joint meetings with the Story county group. Our attendance has averaged

approximately 80 per cent throughout the year at all of our meetings.

Our tuberculosis program operated as usual this year under the direction of B. T. Whitaker. This program has been in effect some four years and is functioning very smoothly.

During the National Education Campaign of the American Medical Association in October our local Society paid for spot announcements on Radio Station KWBG of Boone. We also held a radio interview during the week with your reporter being interviewed by a station announcer.

The hospital facilities in Boone county are good and we have always been able to count on excellent cooperation between the hospital authorities and the local medical society.

Our Woman's Auxiliary has been functioning very well this year and has been holding regular meetings. The auxiliary held a tea for high school girls to promote interest in nursing, late in the fall.

In summary then our society has been active in both local and state-wide affairs and I feel it has done a commendable job.

H. C. SCHARNWEBER, *Deputy Councilor.*

Greene County. We hold about nine meetings yearly with an average attendance of fifteen physicians present. All of the physicians in the county are members of the society. We have had no physician deaths during the past year and no new doctors have located in the county.

We have a very active local tuberculosis x-ray program at the local Greene County Hospital, through which any one in the county may have a free x-ray on order of his family physician. This program is made available by the cooperation of the medical society and the local tuberculosis chapter.

We plan on one good meeting annually with a University speaker on the program. The remainder of the programs in our county meetings are supplied with one local speaker or a sound movie film.

Our hospital accommodates 35 patients, is of modern construction and was opened in 1938. At present a wing which will double the bed capacity is near completion.

E. D. THOMPSON, *Deputy Councilor.*

Dallas-Guthrie Counties. We hold five meetings a year on the third Thursday of January, March, May, September and November with an average attendance of about twenty men. As far as I know, all eligible physicians are members of the county society.

We have actively participated in the tuberculosis program and crippled children's clinics although none have been held in our counties. We have had no organized postgraduate courses in the past year except a one-day cancer clinic at the State Hospital in Woodward under the auspices of the State Medical Society.

Our hospital picture is getting much brighter. We have had no hospital in Guthrie county but we have one under construction at Guthrie Center at the present time which should be opened for use sometime in the spring of 1951. There is a private hospital at Dexter and the Kings' Daughters Hospital in Perry. Dallas county has voted bonds for construction of a new hospital in Perry.

Our Woman's Auxiliary has been very active and we think it has done a good job.

C. A. NICOLL, *Deputy Councilor.*

Hamilton County. The Hamilton County Medical Society has, during the year 1950, continued to be an active, progressive group. Its objectives have been, and will continue to be, concerned primarily with furnishing the best possible medical care to its communities, and to maintain harmonious, friendly relations between its members.

The membership of this society has remained unchanged. No new men have come in, and we have lost none. A business and scientific meeting is held each month except in July and August. In addition to these sessions, we have a luncheon meeting each week, which is devoted primarily to friendly relationship among the members. Attendance at all of these meetings averages above 80 per cent.

The society has cooperated in conducting preschool physical examinations, and immunization clinics throughout the county. The annual crippled children's clinic was held in July. One hundred and forty children were examined. The tuberculosis case finding program was continued. No new cases were found this year. In December, three cases of diphtheria developed in the community. The county society, in cooperation with the county public health nurse and the school authorities, immunized 1,700 individuals within six days of the reporting of the first diphtheria case.

The hospital facilities in our county have been greatly overtaxed during the past five years. In the spring of 1951 construction of a \$450,000.00 addition to the Hamilton County Public Hospital will be initiated. This will furnish our area with adequate bed space and laboratory facilities.

We are pleased that during 1950 our wives organized a Woman's Auxiliary chapter. They are becoming increasingly active, particularly in the program of encouraging the voluntary health insurance plan. Both the county society and the Auxiliary have furnished speakers for various clubs and service groups to carry on this mission. It is our attitude that more is to be achieved by an aggressive, positive stand for the voluntary method, than is accomplished by a "we're agin it" approach.

As the year ends, the society is considering the problems which are posed by the national emergency. Greater demands will be made upon our members. Some will be called into service. Those who remain at home will find themselves working harder and longer each day.

BRUCE F. HOWAR, *Deputy Councilor.*

Polk County. Eight regular meetings of the Polk County Medical Society were held during the year 1950 including one joint meeting with the Des Moines Retail Druggists' Association. Guest speakers provided the programs at each meeting except one when the staff at Veterans' Hospital presented the program. The average attendance at all meetings was about 125. In addition to these meetings, our Executive Council met on call each month and several of the more active committees of the society held many meetings.

All but two eligible doctors of medicine in active practice in Polk county held membership in the society during 1950 or had applications pending. In addition, most of the resident physicians and interns in local hospitals held membership. During the year forty new members were added to the society roster of whom eight are in active practice. Three members of the society, all of whom were engaged at least in part-time practice, died during the year. One member in active practice transferred out of the county.

The society supports and participates in the tuberculosis case finding program. Our Committee on Child Health and Welfare co-sponsors the preschool health examination program which was unusually successful this year. Committees of the society serve in an advisory capacity to the Iowa Society for Crippled Children and Adults, to the Public Health Nursing Association and to the Polk County Welfare Department in its Aid to the Blind and Aid to Dependent Children programs. The society continues to provide the visiting staff at Broadlawns Hospital and members of this society staff the Junior League Convalescent Home. We continue to provide counsel through representation on the Health Center Board, the Child Guidance Center, the Day Care Nursery and several other community health agencies.

The Veterans Administration has conducted a series of postgraduate lectures—about one a month—with an average attendance of about 100.

Currently Polk County has 894 beds in approved general hospitals plus 165 in the osteopathic hospitals and 50 at a mental hospital for a total of 1,109. In addition, there are 131 bassinets in the general hospitals plus 36 in the osteopathic hospitals for a total of 167. Additional hospital facilities now under construction at Iowa Methodist and Iowa Lutheran will provide an additional 154 beds, including 24 in a psychiatric department, and 13 bassinets. If arrangements can be made, additional psychiatric observation facilities will be provided at the county hospital.

During the year the Auxiliary to the Polk County Medical Society has sponsored a civic tea at which time Mrs. Molly Samore of Sioux City discussed Socialism in England. The Auxiliary worked diligently in getting out the vote for the general elections last fall. The Auxiliary assumed the responsibility for the Iowa Society for Crippled Children and Adults handmade products sale in this county.

R. J. STEVES, *Deputy Councilor.*

Webster County. During the year 1950 the Webster County Medical Society again sponsored and conducted radio talks against socialized medicine, these talks being very favorably received. In April of 1950 the society sponsored, for doctors in the surrounding area, a talk on the medical effects of radiation action of atomic explosions given by the Commandant of the Army Medical Department Research and Graduate School, Washington, D. C. This talk brought out some lively discussions.

During the year a Fifty Year Club pin was presented to Dr. Gates Brown of Dayton who is still in active practice. In the mid part of 1950 the physicians of Webster and surrounding counties heard a very interesting discussion about the workings of socialized medicine in England as studied by Dr. Herbert Kersten who had recently returned from there. The remainder of meetings were devoted to scientific papers concerning surgical treatment of cancer and use of ACTH and Cortisone. These meetings were well attended and evoked considerable discussion on these subjects.

Webster county prides itself that 100 per cent of the practicing physicians in the county are members of the county society and that there have been two new physicians entering practice in this county. During the year one of our retired physicians, W. R. Bates, died while living in California after retirement.

The society went on record as favoring the development of a treatment center for poliomyelitis in a Fort

Dodge hospital. This suggestion has since been activated.

The society and members participated in the usual immunization, venereal and tuberculosis clinic work as in the past.

C. J. BAKER, *Deputy Councilor*.

REPORT OF THE SIXTH COUNCILOR DISTRICT

The Sixth District includes the following counties: Benton, Black Hawk, Grundy, Hardin, Iowa, Jasper, Marshall, Poweshiek, and Tama. Regular meetings are held in Black Hawk, Hardin, Jasper, Marshall, Poweshiek and Tama. Benton, Grundy and Iowa counties do not hold regular meetings. The primary reason for this is that their membership is relatively small and they are close to larger cities whose meetings they attend. An effort has been made, however, to stimulate interest in the county society in each of these counties for reasons of organization, administration, etc.

I have attended a county medical society meeting in each of the counties in the past year. None of the counties reports any particular difficulties and the distribution of doctors throughout the district is good.

A district meeting was held in Marshalltown at the Elmwood Country Club on October 3. One hundred twenty-one doctors and their wives were present at the meeting. The Greger Drug Company acted as host to the district at a cocktail party prior to the meeting. Addresses were given by Dr. Thornton, Dr. Bernard, Dr. Conzett, Dr. Whitaker and Mr. Woodrow Sherin. The district was pleased to have Dr. and Mrs. Boice as its guests for the meeting.

Calling of physicians without previous military service is going to work a hardship on many localities. It seems that many small communities have a physician who is subject to early military call.

In most counties I have visited, there is generally tors attended postgraduate courses early in the year Society dues. This information was not adequately conveyed by the delegates to the county society and an insufficient number of men attended district meetings where the subject was fully discussed. There is no apparent objection to the dues but the men like to know the reasons for the increase.

O. D. WOLFE, *Councilor*.

Benton County. The last regular Benton County Medical Society meeting was held at the Virginia Gay Hospital in Vinton on December 19, 1947. A special meeting was held January 24, 1951, at which time our Councilor, Dr. O. D. Wolfe, was present. Eight members were present. The society consists of 17 members with three non-member physicians in the county. During the year no new physicians located here, nor did we lose any.

Participation in health activities includes cooperation with the tuberculosis and immunization programs. No postgraduate courses or institutes have been held in the county, but most of the members attend meetings in Linn and Black Hawk counties and also go to Iowa City to the University.

The Corn Belt Hospital at Belle Plaine is a private institution with seven beds and four bassinets, incubator, x-ray, fluoroscope and laboratory facilities. Medical, obstetrical and some surgical patients are cared for there. More beds are needed but plans for them have not been completed.

The Virginia Gay Hospital at Vinton is a city hospital operated by a board of regents. It has 30 beds and 6 bassinets. Admissions average somewhat over 800 a

year, 48 per cent being obstetrical, 28 per cent medical and 24 per cent surgical.

A new hospital is now under construction and will have 36 beds and eight bassinets. It will be city operated and under the same management as the present one. Cost will be somewhat less than \$400,000, funds being raised by public subscription and federal funds. It should be ready for occupancy by July, 1951.

Our Woman's Auxiliary has not been active.

E. D. LOVETT, *Deputy Councilor*.

Black Hawk County. Highlighting medical advance in the care of residents of Black Hawk county, the completion of the new Schoitz Memorial Hospital to replace the old Presbyterian Hospital was a milestone in Waterloo. Built at a cost of approximately \$2,000,000, this fine example of modernistic hospital construction is listed at 150 beds. It is non-sectarian and non-denominational. From its stainless steel kitchen and cafeteria to the green glass-panelled operating rooms, it is well worth a visit by any medical men passing through Waterloo.

Sartori Hospital in Cedar Falls, Iowa, has 43 beds. The Allen Memorial Hospital in Waterloo added a new fourth floor earlier in 1950, bringing its bed capacity up to 102. Not to be outdone, the St. Francis Hospital recently added another elevator and made numerous improvements in glass block chart rooms and operating room arrangement. Its bed capacity is 110.

Twelve meetings of the Black Hawk County Medical Society were held throughout the year, four of which were special meetings called to transact business requiring society debate or approval. Program meetings average an attendance of 60 to 65 men; business meetings average 40 to 45 voting members. A single joint meeting of the Society with the Woman's Auxiliary was held on March 21, 1950 to hear Dr. Willard O. Thompson, Clinical Professor of Medicine, University of Illinois. Eighty persons attended. Forty-one voting physicians participated in the election of officers on December 19, 1950. Dr. Craig Ellyson, Dr. Frederic G. Loomis, Dr. T. F. Thornton, Jr., and Dr. G. C. Murphy were major officers for the year 1950.

All of the 91 physicians in the county except four are members of the county society or have applications in to our secretary. This includes all the older men. During the year five new members were voted into the society; and at year's end three additional men had applications pending. One physician left the county.

In midsummer Dr. Tom Thornton, Jr. was our first physician to enter the armed forces, followed by Dr. J. H. Woolfolk in December. Dr. John O'Keefe, Dr. C. A. Waterbury, Sr., and Dr. Emma Parsons died during the year.

The Woman's Auxiliary group affiliated with the State Auxiliary only after many years of independent activity as a social club. Its first year has shown progressive growth to the present number of 42 active members. Sponsorship of a three-day sale for the crippled children and adults of Iowa was the first united effort of the Auxiliary, with a resulting sale of over \$400.00.

Close association with health and civic groups is maintained by appointed members from the county society, who meet with such groups as the Red Cross, County Tuberculosis Association, the Civil Defense organization, etc. Volunteer physicians spend many Thursday afternoons examining grade and high school students in a well planned program assisted by the school nurses, to the end that all school students are examined at regular intervals and grades. Abnormalities detected

and immunizations needed are listed on each student's card and referred to his private physician for adjustment.

Dr. G. H. Lawrence, neuropsychiatrist, heads the new Mental Health Center in Waterloo. It was established with help of the society representative, Dr. Herbert Shulman, and cares for cases locally which formerly were referred to Iowa City, especially for diagnosis and disposal.

The Black Hawk County Blood Center completed its first year late in 1950. It represents a major effort on the part of Black Hawk county physicians and Mr. Arthur H. Arend, Secretary of the local Red Cross, to establish the first and only Red Cross blood center in Iowa. It has been most successful, stocking all four general hospitals in the county with the most common types. Rarer blood types can be obtained on short notice at any time. To January 1, 1951, 2,509 units of blood have been drawn and used in the county.

During the month of December alone, a Volunteer Christmas Tree Drive obtained 1,016 registrations for future call. The expanding needs of the armed forces must be met by these centers throughout the nation.

Four excellent speakers conducted a Cancer Symposium in Waterloo September 19, 1950 with the aid of the Speaker's Bureau. The lectures and complimentary dinner were attended by 75 members of the county society.

D. W. BICKLEY, *Deputy Councilor.*

Grundy County. The Grundy County Medical Society, composed of thirteen members, meets quarterly at Grundy Center. Attendance at these meetings averages a good ninety per cent of the members. The coming of our four most recent, and comparatively young members, has added much to the general interest of the meetings.

Throughout the year, participation in the various health activities of the community has been promoted by the Society, but perhaps most outstanding of the accomplishments in this field has been the securing of the services of a county nurse.

The year 1950 also saw a much needed and long awaited project get under way in Grundy Center. This was the start of construction of the new 40 bed Grundy County Memorial Hospital, total cost of which will be \$476,000.00. Just recently, Mrs. George Gould, wife of Dr. George Gould of Conrad, was appointed superintendent of the hospital. She assumed her duties January 1, 1951.

Of special interest in regard to individual members of our medical group is the matter of life membership. Seven years ago, retired as a result of ill health, Dr. George Gould was awarded life membership in our state and county society. Then, during the past year, after completing 50 years of practice, Dr. R. T. Spain, of Conrad, was also awarded life membership.

With our membership at its present level, and provided not too many of our number are called into the armed services, the quality of medicine practiced in our county should, within a few years, reach an all-time high.

E. A. REEDHOLM, *Deputy Councilor.*

Hardin County. The following is a report of medical activities and matters of interest to the medical profession which occurred in Hardin County during the year 1950. There were nine official meetings held during the year and one informal family dinner and golf day in June. Out of 18 active members, we had an average at-

tendance of 12 or 66% per cent. There has been fluctuation of our doctor population as follows:

Dr. J. Wesley Crossley, Iowa Falls, removed in February; Dr. Richard E. Eckberg, Hubbard, elected to Society in February; Dr. Jonathan Johnson, Alden, deceased September 1, 1950; Dr. Paul Tempel, Steamboat Rock, active military service, October 15, 1950; Dr. John Eichenlaub, Ackley, removed to Lubbock, Texas, November 1, 1950.

Our present society consists of 15 active men in a county of about 23,000. Actually, our professional territory is much greater with Iowa Falls and Ackley very near the county line and extending 10 to 15 miles into the next northern tier of counties. We are proud to say we have 100 per cent membership in the county society and in the Blue Shield program.

Several public health projects were accomplished during the year as well as public service at community level. In conjunction with the public health nurse, Miss Evelyn Olson, a follow-up was made on all known tuberculosis contacts. Those with positive tuberculin skin tests were given chest x-rays. Preschool clinics were held throughout the county. No immunization program was completed because there was a comprehensive survey done in 1949. The cancer society is active and Dr. E. J. Steenrod, Iowa Falls, has been appointed chairman of the service committee. All school athletes were examined in regard to their Iowa high school insurance.

There were no clinics or institutes held in the county during the year, however, several attended national conventions throughout the country; namely the American College of Surgeons in Boston, American Academy of General Practice in St. Louis, and American Railway Surgeons in Chicago. Attendance at the State Medical Society in Burlington was poor due to the distance involved.

There are two well equipped and staffed general hospitals in the county; the Eldora Memorial Hospital of 35 beds and the Ellsworth Municipal Hospital, Iowa Falls with 35 beds. The voters passed a bond issue at the last election which will increase the beds and efficiency of the county hospital by about 20 beds. Heretofore, bed patients have posed a great problem in management, and the new addition will allow greater utilization along these lines.

There is no Woman's Auxiliary in the county and at the present there is apparently very little interest.

The county society tied in with the national advertising campaign by placing its own material in every county newspaper and advertiser. We received comment both pro and con but on the whole, the society was dissatisfied with the local approach.

L. F. PARKER, *Deputy Councilor.*

Iowa County. Iowa county had three medical meetings during the year of 1950 with a 90 per cent attendance of its members and number of visiting doctors from Cedar Rapids. The first meeting was held in early spring. The speaker was Dr. C. F. Watts, Jr., from Cedar Rapids; his subject: Surgical Management of Lesions of the Lip. The early fall meeting had as its speaker Dr. W. J. Moerschel, Jr., of Cedar Rapids; his subject: Treatment of Nervous and Mental Disorders. The annual meeting for the election of officers was held November 29 with speakers Dr. J. S. McQuiston and Dr. R. D. Hunting of Cedar Rapids; their subject: Experience in the Treatment of Arthritis with ACTH and Cortisone. Our Councilor, Dr. O. D. Wolfe, was present and brought us up to date on the activities of the Iowa State Medical Socie-

ty. A number of doctors were present from Cedar Rapids, making it a very pleasant evening.

One physician located in Iowa county during 1950, Dr. E. F. Kopecky associated with Dr. C. F. Watts at Marengo. Dr. Frederick Schadt of Williamsburg died in December of 1950.

The society has little activities outside of these meetings except cooperation with the tuberculosis and immunizing program of the State Society.

No postgraduate courses were planned in the county because the members usually attend the Linn County Medical Society meetings, 33 miles away, nine months out of the twelve, and as we are 31 miles from Iowa City, the members take advantage of the postgraduate courses held in that city.

Hopes for a county hospital in Iowa county were killed when the hospital committee voted to shelve the problem. There are two private hospitals in the county, one with a bed capacity of 30 and one with a capacity of 12.

There is no active chapter of the Woman's Auxiliary in Iowa county.

Out of the twelve doctors in Iowa county, there is only one who is not a member of the Iowa County Medical Society. Due to the proximity of Iowa City and Linn County it is hard to get the society on regular monthly meetings.

C. F. WATTS, *Deputy Councilor*.

Jasper County. The Jasper County Medical Society has a membership of sixteen doctors, giving a percentage of 73 per cent of membership. Two of the five non-members have applications for membership now pending, which when accepted will give us a membership of 81 per cent of the total practicing physicians. Meetings are usually held twice a year, with an average attendance of 12 to 13 doctors present.

We have had four new physicians arrive in the county this last year. Doctor Pfundt, who located in Kellogg, and has since departed, was followed by Dr. W. R. Dunseth. Dr. Kenneth Buresh who formerly practiced at Baxter has now left and is practicing in Minnesota. Dr. K. V. Jensen opened his office in Newton last July.

We lost one physician to the armed services, Dr. R. L. Bartley of Sully joined the Navy this year. We lost three members by death: Dr. J. C. Hill, former delegate from Jasper county; Dr. Harp, who practiced at Prairie City before his retirement; and Dr. F. E. Boyd of Colfax. Dr. R. W. Wood of Newton retired after thirty years of active practice, and is now living in Des Moines. We lost five physicians and gained two.

The largest hospital in Jasper county is the 56 bed Skiff Memorial Hospital located in Newton. It is a well equipped, modern hospital approved by the American College of Surgeons. Mrs. Rose Jacobs is the administrator. The other hospital in Jasper county is the Colfax Sanatorium operated in Colfax by Dr. Royal Anspach.

The Jasper County Medical Society sponsors the annual immunization program and participates in the tuberculosis case finding program.

There have been no postgraduate courses offered the past year, and the Woman's Auxiliary does not have a chapter in Jasper county.

J. W. FERGUSON, *Deputy Councilor*.

Marshall County. The Marshall County Medical Society held nine meetings during the past year, with an attendance of about 95 per cent of our membership, and several physicians from adjoining counties, making the

average attendance about 40. We have had 100 per cent membership in the County Society for some time. All were grieved over the death of Dr. Cora Williams Choate, long a member of our society, who had retired from active practice in the past years. No new physicians have located in the county, nor have any physicians left.

The annual crippled children's clinic was held in October, and was very well attended. The immunization program was again continued and the entire county was covered through the work of local physicians and volunteers from the society. The society also participated in the national education endeavor of the AMA.

Hospital facilities in this county are adequate for the present needs, although during certain seasons of the year there is a transient shortage of beds. Both hospitals are provisionally approved by the American College of Surgeons, and are putting forth a splendid effort to secure complete approval.

The Woman's Auxiliary held nine meetings this past year, two in conjunction with the county society. They assisted materially in conducting the crippled children's clinic, emergency blood donor roster, matters pertinent to legislation, etc.

We were all pleased, and very proud, to have one of our members, Dr. Otis D. Wolfe, elevated to the position of Chairman of the Council of the Iowa State Medical Society.

R. C. CARPENTER, *Deputy Councilor*.

Poweshiek County. The Poweshiek County Medical Society held four meetings during the year of 1950. The attendance of members at the meetings was fairly satisfactory. The programs for the June and September meetings were furnished by the Speakers Bureau. The June meeting consisted of medical and surgical problems of peptic ulcer and was well received. The September meeting was an excellent meeting on treatment of fractures and we enjoyed a large attendance of guests from the surrounding counties.

The hospital facilities for Poweshiek county are adequate and beds are always available; however, there is an ever growing need for hospitals for the care of the aged and infirm.

The society maintains a 100 per cent membership of the physicians of the county and each year fully participates in the immunization program and the tuberculosis survey. We regret that the Woman's Auxiliary has not been active; however, some of the women maintain a membership in the State Auxiliary.

S. D. PORTER, *Deputy Councilor*.

Tama County. The Tama County Medical Society holds six regular meetings each year. They are usually held on the last Thursday of February, April, June, September, November, and December. The average attendance during 1950 was 76.1 per cent. The society is composed of 14 members, three of whom are life members. Two of these life members are not actively engaged in the practice of medicine. During the past year one physician, Dr. H. J. von Lackum, died, and another, Dr. S. G. Dobias, formerly of Chelsea, moved to Old Fort, North Carolina. Of the twelve members actively engaged, four had military service during World War II, and an additional three are eligible for military service under the present national emergency. Of the older members one, Dr. A. A. Pace, has been engaged in the practice of medicine for 53 years, while the others have over 40 years to their credit.

In view of the small membership of our society we have no guest speakers. Instead, the scientific portion of our meetings consist in the showing of scientific movies. During the year 1950 our programs were as follows:

February 23, 1950: "The Management of the Failing Heart."

April 27, 1950: "Gastrosocopy and Gastric Ulcers."

June 22, 1950: "Inside Story" (Eastman Kodak Film).

September 28, 1950: "Allergy."

November 30, 1950: "Ano-Rectal Surgery."

December 28, 1950: No movie.

Members of this society annually conduct a county-wide immunization program for the school children. They likewise participate in the crippled children's clinic held annually at Marshalltown, Iowa.

The local hospital facilities are not satisfactory, but members of this society are extended courtesy staff privileges at the hospitals in the neighboring counties.

There is no unit of the Auxiliary in this county.

A. J. HAVLIK, *Deputy Councilor*.

REPORT OF THE SEVENTH COUNCILOR DISTRICT

All of the counties in the Seventh District have shown marked activities during the past year, many of them holding meetings relative to the legislative problems as well as scientific aspect of medicine.

Meetings of the cancer and tuberculosis societies and the heart and crippled children's clinics throughout the district have attracted marked attention and were very well attended. One district meeting held at Cedar Rapids, while not as well attended as one might wish, did bring out discussion and show interest in the legislative welfare society. A number of hospitals have been built or additions made to existing hospitals throughout this district, thus placing hospital facilities within the reach of practically every person in the district.

I am pleased to note the increased interest throughout the district in county society meetings and feel that the getting together at these meetings and talking over our problems is a long step toward solving them.

I wish to take this opportunity to thank my deputy councilors for their faithful work in compiling this report.

H. A. HOUSHOLDER, *Councilor*.

Buchanan County. The Buchanan County Medical Society held five meetings during the year. These were concerned mostly with matters of local interest. Members of this society have been active in attending scientific programs at Cedar Rapids, Waterloo and Oelwein. A number of the members attended the refresher course at Oelwein sponsored by the Speakers Bureau.

One of the chief activities of our society has been the new addition to the Peoples Hospital, the third addition since its beginning in 1917. One of our members, Dr. F. F. Agnew, has been active in the promotion of the hospital since its earliest inception and has given faithful service for thirty-five years.

Our society was privileged this year to participate in a recognition celebration for one of our members, Dr. H. A. Housholder, when his home town of Winthrop feted him upon the completion of his 45th year in the practice of medicine. He too, deserves special mention for his work on the building committee of the new addition to the Peoples Hospital.

We are proud to have as one of our members, Dr. Max Witte, Superintendent of the Independence State Hospital. We are very grateful to Dr. Witte for the energetic work he has carried out in translating modern psychiatric thinking into action for the good of our people. We of Buchanan county joined with others from all over Iowa in the ceremonies for the opening of the new screening center.

The doctor-patient relationship over many years in Buchanan county has been such that numerous clubs and farm organizations have, after ample discussion, passed resolutions condemning socialized medicine and have written their Congressmen to that effect.

J. F. LOECK, *Deputy Councilor*.

Cedar County. The county medical society held four meetings during the year, with an average attendance of eight. Seven of the eight members eligible for membership belong. We participated in the tuberculosis and immunization programs. No postgraduate courses were given in the county but some of our members attended courses elsewhere. We have no hospital and no Woman's Auxiliary.

P. M. HOFFMAN, *Deputy Councilor*.

Clinton County. The Clinton County Medical Society was fairly active during the past year. We had ten meetings. Average attendance was 20 to 25. The county society is well represented as far as physicians are concerned. I know of only four doctors in the county who are not members of the Society. We had four new men locate in the county in the last year, another moved away, one has retired and left the city and one died, Dr. F. B. Morgan.

We did not carry out the immunization program as we did the fall of last year. We had a crippled children's clinic, which was very well attended. There have also been several meetings of the tuberculosis committee, which our medical men attended. The Tumor Clinic is functioning very well in our society. We hold two meetings a month and in the last few months held an extra meeting to review cases we had previously seen so that we could check up on progress. Our chairman is an extra good one, and we are also fortunate in having a very efficient secretary to work with him.

The Jane Lamb Hospital raised \$500,000 to build an addition to the hospital. Mercy Hospital in Clinton has done considerable interior refurbishing. A new hospital is also under construction in DeWitt, Iowa, for which ground was broken this fall, but we are still short of hospital beds.

R. F. LUSE, *Deputy Councilor*.

Delaware County. Our medical society meets monthly except during the months of June, July and August. Guest speakers were obtained from out of town or movies on medical subjects were shown. We usually have 90 to 100 per cent attendance at these meetings. We have 12 active members in our society. There are three other physicians in the county but they are retired and do not belong to the society or attend the meetings. No new doctors settled in the county during the past year.

There has been no combined program of immunization in the community. These are usually taken care of by each physician individually. People here seem to be fairly alert and interested in immunization and by the time the child reaches school age many of them have been immunized against smallpox, diphtheria, tetanus and pertussis. Dr. Paul Meyer of Manchester is

the medical advisor to the local tuberculosis committee. Dr. W. J. Willett, Manchester, acts in the same capacity on the Crippled Children program. Around 6,500 people in this county took advantage of the free x-ray service offered by the tuberculosis association last fall. Few took advantage of the free urine tests for diabetes mellitus done by the local doctors some weeks back.

There have been no postgraduate courses or institutes held in this county during the past year. Two doc-

little knowledge of the reasons for increasing the State elsewhere.

On August 8, 1950 our new hospital, the Delaware County Memorial Hospital was opened for public use. It has a capacity of over 48 beds. Nineteen doctors have joined the staff. Many of these are out of county. Our staff meetings are held once monthly—on the third Tuesday. The hospital is very well equipped and so far we have had no nursing shortage. Although we lack local surgeons, surgeons from out of town have served as needed.

The Woman's Auxiliary is a fairly new organization in this county but it has been organized and is now expanding its work.

W. J. WILLETT, *Deputy Councilor.*

Dubuque County. The Dubuque County Medical Society has been very active during the year of 1950. We have had eight regular and three special meetings. The average attendance at our regular meetings was 30; 20 at the special meetings, with the exception of one public meeting. The eight regular meetings were devoted to the presentation of scientific papers.

Two special meetings were devoted to the study of Blue Shield and Blue Cross contracts as they were to apply to industry, and favorable opinions were expressed to the representatives of these organizations. One meeting was held by the secretaries of the doctors to discuss the filing of reports for Blue Shield and Blue Cross which will expedite the completeness of reports and the payments of outstanding claims.

The Dubuque County Medical Society was host to the leaders of the various civic, labor, fraternal and other professional groups at a dinner which preceded a meeting for the public at which was discussed socialized medicine in England by Dr. Ralph Gampell and Mrs. Mollie Samore of Sioux City. Approximately 800 people were present at this meeting. Approximately 200 were present for the dinner.

The Dubuque County Medical Society also met with the druggists of this area and representatives from the Iowa Pharmaceutical Association and the Iowa State Medical Society. Mutual problems were discussed at this meeting. This meeting, like the others, proved to be very informative and helpful to all parties concerned.

Under the sponsorship of the State Medical Society, the State Department of Health and the Iowa Division of the American Cancer Society, a Cancer Institute was held at Xavier Hospital this fall. The crippled children's clinic was held in Dubuque in October. Physical examinations were given to the members of the Dubuque Boys' Club. The McNamara Tumor Clinic meets regularly for the discussion of all phases of tumor control.

The Finley Hospital is undergoing remodeling and the addition of a new section increasing all facilities of the hospital is under way.

The Woman's Auxiliary of the Dubuque County Medical Society is also very active and has assisted the so-

ciety at many of its functions. We particularly wish to commend our Auxiliary publicly for the fine work that they have done and are doing in our behalf.

D. F. WARD, *Deputy Councilor.*

Jackson County. Since our new hospital was opened, we have had monthly staff meetings with very good attendance. We definitely have closer liaison between doctors in the county as well as some few doctors in adjacent counties that use our hospital facilities. Attendance has been up to 13 doctors and runs an average of six to eight.

All but one of the doctors in the county is a member, so that our percentage is 94. One of our younger members, Dr. J. E. Swegart, died of poliomyelitis during the fall. No new doctors moved into the county, nor did any leave.

We have cooperated in immunization and tuberculosis programs, but held no postgraduate course during the year. We do not have a Woman's Auxiliary. We feel the new hospital will make it possible for us to give better medical care to our people and we know it has revived fraternalism among the doctors.

F. J. SWIFT, JR., *Deputy Councilor.*

Johnson County. Eight regular meetings and the annual meeting of the society were held in 1950. Scientific programs were presented at all but the June meeting when the customary picnic replaced the regular meeting. The programs presented were as follows:

January: "Endometrial Carcinoma" by Dr. John H. Randall of University Hospitals.

February: "Diagnosis and Treatment of Depression" by Drs. J. S. Gottlieb and P. E. Huston of Psychopathic Hospital.

March: "Surgical Treatment of Certain Types of Hearing Loss" by Dr. C. M. Kos of University Hospitals.

April: "Quinidine in the Treatment of Disorders of Heartbeat" by Dr. H. M. Korns of Mercy Hospital.

May: "Britain's Nationalized Health Scheme" by Mrs. Mollie Moon Samore of Sioux City, Iowa.

October: "Congenital Heart Disease" by Dr. J. W. Culbertson of University Hospitals.

November: "The Value of Pulmonary Arteriography in the Diagnosis of Lesions of Pulmonary Parenchyma" by Dr. Philip G. Keil of Des Moines.

December: "Expert Testimony" by Mr. Arthur O. Leff of the College of Law, State University of Iowa.

The highest attendance was 122 and the lowest 79, with an average of 87. Twenty-eight attended all meetings and 21 others attended all but one. Thirty-one attended none of the meetings.

Twenty-eight were elected to active membership, two to affiliate membership, and two to life memberships. Twenty-three were transferred from junior to active membership. Two members resigned, five were dropped, 11 transferred to other societies, and one died.

	1949	1950
Life members	1	6
Active and associate members	169	188
Affiliate members	14	10
Junior	23	3
Non-resident	11	6
Military Service	0	4
Total	218	217

For the above report of the activities of the society, the programs presented and the attendance, member-

ship, etc., Dr. E. J. Boyd, secretary, should receive full credit.

The county has a very active tuberculosis association and program. Free x-rays of all teachers in the county are given by the association. Numerous postgraduate courses have been given at the University, all very well attended. Hospital facilities in the county have been greatly enlarged due to an addition to Mercy Hospital and extension of service in the University Hospitals. There is no Woman's Auxiliary.

G. C. ALBRIGHT, *Deputy Councilor*.

Jones County. The county medical society holds only two or three meetings yearly, but members attend scientific programs in Linn county. We have 13 members; no new physicians located here during the year and none died or left.

The county society takes part in health activities such as the crippled children's clinic, tuberculosis clinic and cancer surveys. We are fortunate in having a most cooperative county health nurse.

We have two hospitals in the county, both well conducted. We have no Woman's Auxiliary. One physician, Dr. F. B. Sigworth, has been in practice in Jones county 50 years. Members of the county society and their wives tendered him a banquet in honor of his long and successful practice.

T. M. REDMOND, *Deputy Councilor*.

Linn County. The Linn County Medical Society held nine meetings during the year with an average attendance of between 75 and 100 physicians. Ninety-eight of the eligible physicians in the county are members, only three not belonging. Two new physicians located in the county during the year, three died, two left the county, one of them to enter military service.

Members participated in staffing two well-baby clinics and conducting a county tumor clinic. No postgraduate course was held. We have two hospitals in Linn county, St. Luke's and Mercy, each providing 200 beds, plus 67 bassinets. St. Luke's Hospital is building a new wing which will be completed in 1952 which will provide approximately 100 additional beds.

We have no Woman's Auxiliary. The Council might like to know that a great many members of the society grumbled a good deal at the increase in State Society dues. They were not sure the jump to \$50 was justified but will pay it.

B. F. WOLVERTON, *Deputy Councilor*.

REPORT OF THE EIGHTH COUNCILOR DISTRICT

Des Moines County. The Des Moines County Medical Society held nine regular meetings during the year. The programs varied, with speakers coming from the University of Iowa, and also local men giving scientific papers. Some programs were devoted to economic conditions and reports in general. All of our physicians are members of the society.

The county is proud of its accomplishments in the treatment of infantile paralysis in this end of the state. Our doctors took care of 87 cases of poliomyelitis in our isolation ward in Mercy Hospital. This was done by teams set up by the county medical society. They included a general practitioner, internist, pediatrician, nose and throat man, anesthesiologist, and orthopedist. Following the patient's discharge, he was followed weekly in a clinic sponsored by the county society in the Des Moines County Health Unit. The clinic is in charge of Doctors Ober, McKitterick and Gibbs. The doctors' time

is given without charge to these people. The brace maker comes from Chicago every other week. We also have a full time physiotherapist. To us, this is one of our outstanding accomplishments of the year.

Some of our members spent many hours speaking before civic groups on the subject of the federalization of medicine. We were also active during the election and I think our activities paid good dividends. Two of our men are now in active service, and while we feel we have a definite shortage locally, on the whole we feel that we have had a very successful year.

F. G. OBER, *Deputy Councilor*.

Henry County. The Henry County Medical Society had 11 monthly meetings during 1950. They consisted of both scientific and group discussions. We met regularly with the Auxiliary for dinner. The society also sponsored a county wide immunization program and also a postgraduate course from the Speakers Bureau. All in all it has been a very successful year. We lost one physician by death, Dr. O. A. Geeseka of Mt. Pleasant. There are enough physicians to take adequate care of the needs in the county except in the southern part.

J. S. JACKSON, *Deputy Councilor*.

Jefferson County. The Jefferson County Medical Society held eight meetings throughout the year. There was an average of 10 physicians attending. We have had no new physicians in the county, and have had one death, Dr. Ira N. Crow.

The county society participated in all health activities. We did not have a postgraduate course, but some of our members attend regularly in Wapello county. Our hospital is completed and open—having 48 beds. Our Woman's Auxiliary is organized and meets once every month in homes or at the hospital. Their activities consist of hemming towels, rolling bandages or making dressings, along with other types of work.

All county society members attended the Centennial meeting in Burlington in April, and are planning to attend in Sioux City.

R. A. MCGUIRE, *Deputy Councilor*.

Lee County. The Lee County Medical Society held four meetings during 1950. The first was a business meeting where attendance was small because of icy roads. The others were program meetings where scientific talks were presented. Most of our speakers came from Iowa City and St. Louis.

All but two eligible members of the county belong to the society. We lost one member to the armed forces. The Graham Hospital opened its new wing, bringing its capacity up to 100 beds. The St. Joseph Hospital has 140 beds.

L. C. PUMPHREY, *Deputy Councilor*,

R. L. FEIGHTNER, *Deputy Councilor*.

Louisa County. Louisa county had a decided slump during the year. Previously we have had 100 per cent membership, but during 1950, only one physician paid dues to the American Medical Association. Instead of twelve regular meetings, only two meetings were held with only 60 per cent attendance.

At the present time, only one member has paid dues for 1951. It is hoped that more may join later.

J. H. CHITTUM, *Deputy Councilor*.

Muscatine County. The Muscatine County Medical Society met but three times during 1950. Two were combined scientific and business meetings and the third one had to do entirely with new hospital planning. Eighteen

out of twenty physicians in the county belong to the county society, and the two not belonging are not eligible. We lost two physicians during the past year; one through death and one through removal. No new physicians entered the county. The calls for response for help in health activities has been good. We had no postgraduate course in the county.

We have no Woman's Auxiliary in existence in Muscatine county.

Hospital facilities in Muscatine are not adequate at present, either in number of beds or in acceptable beds under hospital rules and regulations. There is a strong movement on foot for building a 100 bed modern hospital to replace the two existing hospitals. One of the present hospitals then will be used as a convalescent hospital and for overflow when needed. Plans for this new hospital are complete, and are waiting only for full financial arrangements and availability of materials.

C. P. PHILLIPS, *Deputy Councilor*.

Scott County. The Scott County Medical Society held nine meetings during the year. The June meeting was a social one. Out of the approximate 100 members, the average attendance is 75. Almost all physicians in the county are members of the medical society. During the past year five new doctors have located here, one has retired, one has resigned, one has died, and one has left the county.

All activities related to health receive the attention of the Scott County Medical Society. We furnish speakers, immunizations, clinics, etc. Our members attend postgraduate courses at the University Hospitals.

We are short of hospital beds. St. Luke's is building a practically new hospital, but Mercy Hospital is always full. When St. Luke's Hospital is finished, Mercy Hospital hopes to put on an addition, and then we may be able to furnish better hospital service.

A. P. DONOHUE, *Deputy Councilor*.

Van Buren County. The Van Buren County Medical Society met four times during the year with 100 per cent attendance. All of the eligible physicians of the county are members of the county medical society.

Practically all the people in the county had a chest x-ray during the year. The new county hospital is finished and will be open in the near future. A Woman's Auxiliary was organized in December.

L. A. COFFIN, *Deputy Councilor*.

Washington County. The Washington County Medical Society held nine meetings including the Cancer Institute September 20. We lost one member, Dr. H. F. Masson during the year. No new physicians located in the county.

E. D. MILLER, *Deputy Councilor*.

REPORT OF THE NINTH COUNCILOR DISTRICT

Appanoose County. The Appanoose County Medical Society had 100 per cent membership during the year, with 13 active members. None left during the year. The county society held ten meetings, six of them scientific. Guest speakers for the year included Dr. Phelps, Dr. Voorhees and Dr. Fox, all of Ottumwa, and Dr. Ponseti and Dr. Rembolt of Iowa City. We had one meeting with the pharmacists and their wives. This was very successful. A very interesting program was put on by the State Medical Society and the Iowa Pharmaceutical Association. Centerville was host to the Ninth Councilor

District Meeting in the fall. Approximately 89 people attended this. The average attendance for the year was 70 per cent.

Twelve hundred immunizations were done through the rural school clinics during the year. The tuberculosis association purchased a miniature chest x-ray machine and with the cooperation of the local hospital, they x-rayed 2,176 individuals. It is hoped that all school children will have x-rays before the end of this year.

We have one hospital, St. Joseph's at Centerville, which has a number one rating. It is a 50 bed hospital operated by the Sisters of Mercy. It has been filled beyond capacity constantly, requiring the doubling and tripling of beds in what would otherwise have been private rooms. Plans for enlarging the hospital have been under consideration, but to date no definite action has been taken.

The Woman's Auxiliary was reorganized a year ago through the efforts of Mrs. Howell of Ottumwa. The organization is active with a membership of ten. Luncheon meetings at the local hotel were arranged and paid for by the members of the county medical society. The programs have stressed better public relations.

E. A. LARSEN, *Deputy Councilor*.

Davis County. Four scientific meetings attended by most of the members of the Davis County Medical Society were held during the year. Sixty-five per cent of the Davis county physicians belong to the State Medical Society. We had no postgraduate course in our county.

One member of the society serves on the executive board of the tuberculosis association, and one on the Red Cross. All members cooperated in the tuberculosis case-finding program and the Red Cross drive. No clinics were conducted. The members cooperated in the Four-H club clinic held by the Farm Bureau. We have no Woman's Auxiliary.

The new 35 bed Davis County hospital is now operating at full capacity.

C. H. CRONK, *Deputy Councilor*.

Keokuk County. The Keokuk County Medical Society held four meetings during 1950. These were business and social meetings, and our attendance was very good. We have ten active members in the county, and one retired. Our society has cooperated 100 per cent in the tuberculosis case-finding program, and in the immunization programs. We had no new physicians entering the county, and we have no Woman's Auxiliary. Our hospital facilities are quite satisfactory.

D. L. GROTHAUS, *Deputy Councilor*.

Lucas County. The Lucas County Medical Society held monthly meetings during 1950. We did not have scientific meetings but attended those of other counties. We have 100 per cent membership in the county, state and national societies. The county participated in both tuberculosis and Red Cross drives. We have had no health clinic of our own, but took part in the crippled children's clinic in Centerville. We lost two members by death in 1950, and one new physician moved in but left in December. We have no Woman's Auxiliary. Our hospital conditions are unchanged.

R. E. ANDERSON, *Deputy Councilor*.

Marion County. The Marion County Medical Society held four meetings during the year. The first was a scientific program held at the Veterans Hospital at Knoxville, with Dr. Paul of the University Hospitals at

Iowa City, assisted by Walter Myers, President of the Iowa Pharmaceutical Association. The second meeting was held in Pleasantville with a scientific program given by Dr. Arnold Gordon. The third meeting was again held in Knoxville with Dr. Tidrick, and Dr. Cullen of Iowa City. The fourth meeting was held at the same place, with Mr. Carroll Johnson, the local attorney, discussing legislative matters. Attendance at the above meetings was only fair. Every physician who is eligible is a member of the society. The county has participated in the tuberculosis case-findings, the health clinics, and the Red Cross. We have no Woman's Auxiliary.

H. L. BRIDGEMAN, *Deputy Councilor*.

Monroe County. The Monroe County Medical Society held two meetings during the year with 50 per cent of the members attending. We have five active members and three retired. We held no postgraduate courses and no clinics. We lost one member by death. We have no Woman's Auxiliary. The county has one privately owned hospital, but there is a county hospital under construction.

Our society has not been active, and there seems to be no possible way to make it that way.

H. J. RICHTER, *Deputy Councilor*.

Wapello County. During the past year, medical activities in Wapello County have been constant, lively and aggressive. In addition to the eight regular monthly courtesy dinner-meetings for all members and invited guests, there have been nine meetings of the Wapello County Medical Society Study Club, and twelve staff meetings at each of the three hospitals, St. Joseph Hospital, Ottumwa Hospital and the county owned and operated Sunnyslope Tuberculosis Sanatorium. The tumor clinic, serving southeastern Iowa, has become a veritable beehive of activity. Clinics are held every Saturday morning at the Ottumwa Hospital following an eight o'clock breakfast. Average attendance is fifteen. Because of difficulties with donors, our society established a nonprofit blood bank earlier in the year, and 457 transfusions were given during the first six months. Not only is it now self supporting but one reduction in cost to patient has been possible.

Two deaths occurred during the year. There were no removals other than service connected. Four new members were admitted, raising our membership to 47, including one retired because of ill health. Our membership stands at 100 per cent. The new Ottumwa Hospital, well under construction, will be completed during the coming year at a cost of more than \$1,700,000, with a bed capacity of 135. Furnishings, laboratory and scientific equipment will be of the very best. The society employs a full time pathologist, and a group of able specialists are available at all times for consultation.

A forceful campaign has been waged against socialized medicine, participated in with equal vigor by our society and Woman's Auxiliary. Able speakers from both groups addressed various social and business organizations with telling success. The Auxiliary has a paid membership of forty. Meetings are held on the first Tuesday of each month to correspond with the eight regular meetings of the county medical society. These meetings are held in the homes of members, starting at 7:30 p. m. with refreshments served later. Dinner meetings were also held at the Country Club including a Thanksgiving dinner. In addition to the many cards and letters sent our Senators and Congressmen, they contributed \$20 to the State Auxiliary Nurses' Fund, induced ten girls from neighboring small towns to join the freshman

nursing class at St. Joseph Hospital; and are now planning to furnish a room in the new Ottumwa Hospital, each member contributing \$10 to the fund. Individual contributions by members of the Wapello County Medical Society to the Christmas dinner fund for children of the striking John Deere UAW-CIO amounted to \$49. The A.A.P.S., Blue Shield, Red Cross, March of Dimes, 4-H Club, and children of preschool age—all have received the liberal support of the Wapello County Medical Society and its Auxiliary. It has been a good year for medicine in Wapello County, and meetings have been well attended.

C. A. HENRY, *Deputy Councilor*.

Wayne County. The Wayne County Medical Society held eight meetings during the year. The programs consisted of sound motion pictures or out of county speakers. The society has taken part in the tuberculosis case-finding and immunization programs.

There are eight physicians in the county, all belonging to the society. No new physicians have located here, and none have left during the year. We have one small hospital in Corydon. Many patients must go 20 to 30 miles for hospitalization.

J. H. McCALL, *Deputy Councilor*.

REPORT OF THE TENTH COUNCILOR DISTRICT

Herewith are the reports of the deputies of the Tenth Councilor District. I wish to express my appreciation for the support they have given me since my appointment to this office last year. I feel that with their help, the tenth district will have a good year in 1951.

I. K. SAYRE, *Councilor*.

Adair County. All doctors in the county are members of the county society except one who has never joined. We had no countywide immunization program, but actively participated in the tuberculosis case-finding program of the crippled children's clinic.

Hospital facilities have been quite noticeably increased by the opening of the Adair County Memorial Hospital in Greenfield last July. It has proven its merit by the response from the entire surrounding area.

We made an effort, last year, to combine scientific programs with surrounding counties, but did not succeed. We will try again this year. We have repeatedly expressed ourself that more scientific programs should be held. Our Woman's Auxiliary is not active.

A. S. BOWERS, *Deputy Councilor*.

Clarke County. Being a small county with only four active physicians, we have had little activity as pertains to a well integrated medical society. We have held only the necessary business meetings to keep the society alive. We have lost one member by removal and have added one by transfer. With the organization of a multi-county society in this part of the state, we expect to take an active part in promoting the scientific programs that so many of us have missed during the past decade.

H. E. STROY, *Deputy Councilor*.

Decatur County. The Decatur County Medical Society held only one meeting during the year with six physicians present. Eighty per cent of the physicians of the county belong to the society. One new doctor located here during the year. We participated in the tuberculosis case-finding program. We have a county hospital at Leon which serves us well. We have no

Woman's Auxiliary. The staff meetings of the hospital take the place of county medical society meetings.

F. A. BOWMAN, *Deputy Councilor*.

Madison County. The Madison County Medical Society, with 100 per cent membership, held four meetings during 1950, mostly for discussion of problems of policy. We had no scientific programs, but participated in the tuberculosis case-finding program in Winterset in April.

We are proud of our new, modern, fire resistant, Madison County Memorial Hospital, located on a ridge immediately south of Winterset, which formally opened June 10 and 11. The hospital has a regular capacity of 39 beds with a possible expansion to 50. It has eleven bassinets. It has been well patronized since it opened for business and the patients are well pleased with the service provided.

The Madison County Medical Society was host to the tenth district meeting which was held in Winterset on September 22. The meeting was well attended.

C. B. HICKENLOOPER, *Deputy Councilor*.

Ringgold County. Ringgold county is a small county in the matter of population, also in the number of physicians. Two new physicians located in the county in the past year, and one who had left has returned. We held four meetings during the year, all of them called business meetings. We participated in the clinics held at Creston rather than holding them here in this county. We also attended postgraduate courses in other counties.

Our Ringgold county hospital is nearing completion. We hope that this will make for a more active society. Another thing which should stimulate scientific activity is the formation of a multi-county organization for scientific meetings. This will be an advance, I am sure.

E. J. WATSON, *Deputy Councilor*.

Union County. Twelve monthly meetings were held during 1950, with an average attendance of 90 per cent of the members. The county has 100 per cent membership. Five physicians located in the county during the year, and one died in September. The 65 bed county hospital provides good medical care for the people.

The counties immediately surrounding Union have banded together to form the South Central Medical Society, which plans to hold bi-monthly meetings during the year. This should provide a large enough group to attract scientific speakers of merit.

The Woman's Auxiliary helped in getting out the vote, in spreading the gospel of private practice as against socialized medicine, and arranged for different talks to other organizations. The county society sponsored a number of radio talks over the local station, and advertised against socialized medicine in the local paper. This was all done at the local society's expense.

C. C. RAMBO, *Deputy Councilor*.

Warren County. Warren county is in the Des Moines area and the members attend scientific meetings there. We have one or two business meetings a year with an average attendance of six. The Auxiliary meets with us at these times. Our membership is 100 per cent.

We participate actively in the tuberculosis and immunization programs, and send our crippled children to the out-patient clinic at Creston. We have a good small hospital for 10 or 12 patients, and six bassinets.

C. H. MITCHELL, *Deputy Councilor*.

Report of Standing Committees

REPORT OF THE COMMITTEE ON CONSTITUTION AND BY-LAWS

Constitution: The following articles had their first reading at the second meeting of the House of Delegates in April 1950. They are therefore submitted for a final vote at this session. As amended the articles read—

ARTICLE II (Final vote 1951)

The purpose of this Society shall be (a) to bring into one compact organization the entire medical profession of the state of Iowa, (b) to unite with similar organizations in other states to form the American Medical Association, (c) to extend and advance medical science, (d) to elevate the standard of medical education, (e) to aid in the enactment and enforcement of just medical laws, (f) to promote friendly intercourse among physicians and to guard and foster their material interest, and (g) to enlighten the public and direct public opinion in regard to the great problems of state medicine. These purposes are to the end that the profession shall become more capable and honorable within itself and more useful to the public by preventing and curing disease, thereby prolonging and adding comfort to life.

ARTICLE III (Final vote 1951)

Section 1. This Society shall consist of physicians who are members of the component medical societies who have been certified to the headquarters of this Society, and whose dues and assessments for the current year have been received by the Secretary and Treasurer of the State Society.

Section 2. Life Members.—Any member of the Society may be elected to life membership in the State Society by the House of Delegates who has (a) been practicing medicine for fifty years and has been a member of the Society for thirty years, or (b) who is incapacitated to such an extent that the payment of dues would work a hardship upon him, providing his county medical society votes to present his name for such life membership in the State Society. A two-thirds vote of those present shall be necessary for the conferring of life membership.

Life members shall be accorded all the privileges of active members but shall be exempt from the payment of dues.

ARTICLE IV (Final vote 1951)

Component societies shall be those county medical societies which hold charters from the Iowa State Medical Society.

ARTICLE V

Section 1. (Final vote 1951). The House of Delegates shall be the legislative and business body of the Society. It shall consist of (a) delegates elected by the component county societies, and (b) ex-officio, the officers of the Society as defined in this Constitution.

Section 2. (Final vote 1951). The Executive Council of the Iowa State Medical Society shall have full authority and power belonging to the House of Delegates in the interim between duly authorized sessions of the House of Delegates except the authority and power to fill a vacancy in the office of President-Elect, as provided in Article VIII, Section 4, of this Constitution.

ARTICLE VI (Final vote 1951)

The House of Delegates may provide for a division of

the scientific work of the Society into appropriate sections for the annual sessions of the Society. It may also provide for the organization of such councilor district societies as will promote the best interests of the profession. Such societies are to be composed exclusively of members of the component county societies.

ARTICLE X (Final vote 1951)

At any general meeting the Society may, by a two-thirds vote, order a general referendum upon any question pending before or passed by the House of Delegates. The House of Delegates may, by a two-thirds vote of its own members, submit any question before it to the membership of the Society for a final vote. A majority of the members voting shall decide the question, and that decision shall be binding upon the House of Delegates.

Your Committee recommends the adoption of these changes in the Constitution as set forth.

BY-LAWS

Section 10 of Chapter IX had its first reading at the last meeting, April 1950, and is therefore ready for its final vote at this session. Section 10, Chapter IX reads as follows:

The Public Relations Committee shall consist of a minimum of seven members including the Chairman. It shall have referred to it all matters arising in the state or nation which are relative to medical practice outside the field of scientific medicine and for the promotion of better physician and public relationships particularly in the fields of medical insurance, medical economics, medical services, veterans' affairs, public health, public information, interprofessional relationships, and any such other considerations as would properly come under the head of public relations which are not already specifically assigned to some other committee.

Your Committee recommends this change in the By-Laws. No further amendments to the Constitution or By-Laws have been proposed during the year.

GEORGE C. ALBRIGHT, *Chairman*,

JOHN D. CONNER,

HENRY C. SCHARNWEBER.

REPORT OF THE GRIEVANCE COMMITTEE

The Grievance Committee has held monthly meetings, with one exception, since it was organized in May of 1950. The personnel has changed somewhat due to resignations. Dr. Bowers of the tenth district resigned, and was replaced by Dr. Anderson. Dr. Alden of the eleventh district resigned, and was replaced by Dr. Flynn. Meetings have been very well attended, with never less than eight members present.

At the first meetings, the cases were those which had accumulated prior to the inception of the committee. A few were received during the summer, but after the Press-Radio Conference in September, many more came in. We still continue to receive cases.

To date we have had 38 given to us for consideration. Of these 15 have been settled, five are new, and 18 are being acted upon at present. The entire state is represented. Cases are of various types and provide a good cross-section of what one would expect.

Cooperation from the profession has been excellent with one exception. The doctors have complimented the committee in several cases for the manner in which the cases were handled. The same is true of the lay persons submitting the grievances.

The following points are those mostly responsible for the filing of grievances with the committee:

1. Remarks to a patient regarding other doctor's treatment or charges;
2. Discussion between doctors within ear shot of patients regarding prognosis, severity of case, finances, and general reputation;
3. Lack of diplomacy and tact in refusing to accept a case, refusing to make a call, telephone conversations, refusing to make emergencies ok for a prescription, and discussing fees, especially before treatment;
4. Misunderstanding by patients;
5. Misquoting doctors by patients;
6. Patients who expect to receive a favorable result or cure or else they do not expect to pay their obligation;
7. Doctors who guarantee good results or a cure;
8. Lack of the knowledge of the fee schedule on the part of patients;
9. Exorbitant fees, (surprisingly few);
10. Poor results from surgery or traumatic cases;
11. Careless remarks of interns or students;
12. Negligence, actual or assumed.

Respectfully submitted,

M. G. BEDDOES, *Chairman*.

REPORT OF THE LEGISLATIVE COMMITTEE

The Legislative Committee consists of Drs. J. W. Billingsley, R. J. Steves, J. D. Conner, T. F. Thornton, A. B. Phillips, and F. C. Coleman, Chairman. One of its first acts was the formation of a statewide legislative organization. This was done by asking each county medical society to appoint a legislative contact man. Cooperation of the county medical societies was excellent in appointing these men. It was possible for the committee to get information on each of the candidates for the legislature through questionnaires completed by them, and this information was valuable during the campaign. Also during the campaign, representatives of the Legislative Committee arranged for luncheons for approximately 25 of the candidates who especially deserved support. These were quite successful.

On January 7, 1951, a meeting was held to review legislation of interest to the Society. Endorsement was given to a bill which would convert the coroner's office to a medical examiner's office. The bill provides for a state medical examiner to direct the activities of the county medical examiners, a toxicology laboratory, and removes many of the noxious duties now performed by the coroner. The county health unit bill as prepared by the Iowa Health Council was reviewed and approved in principle. The wording of the bill was considered inadequate and it was suggested that the laws of several states be reviewed as a preliminary to redrafting the bill. The sections dealing with the duties of the county health units were reviewed and recommendations were made which would limit the activities of the county health units to matters of basic public health. A CIO sponsored bill revising certain portions of the compensation laws was held for further study, as were some recommendations from the Labor Commissioner's office. Possible legislation affecting the basic science law was considered in detail.

The Committee has been especially pleased with the work of the Legal Counsel of the Iowa State Medical Society, Mr. I. W. Myers. He has been constantly active in our behalf. The relations of the Legislative Committee with other members of the Interprofessional Association have been very harmonious.

The Chairman wishes to express the appreciation of the Committee for the fine cooperation of Dr. Bernard, Miss McCord, and others from the state office in providing information, getting out legislative bulletins, and handling correspondence.

F. C. COLEMAN, *Chairman*.

REPORT OF THE MEDICOLEGAL COMMITTEE

Because of the helpful and efficient services of our commercial insurers and the high standard of medical practice in Iowa, the Medicolegal committee has had very little to do during the past year. A few letters of advice have been written to anxious members.

That our committee has had little to do, is no reason for an undue sense of security. In a subtle way controversy over socialized medicine has brought the medical profession into the field of public attention.

A physician's legal security vests in the long and well established doctrine that good medical practice consists of services available and suitable to individuals in a given locality at a given time. In other words, if a qualified physician exercises reasonable skill and judgment consistent with the time, the place, and the facilities afforded, great latitude in judgment is accorded. Don't fail to note that true medical literature is now a facility at hand everywhere.

For some time many of our leading publications have practiced a back-handed type of medicine. Not long ago an extended article left an impression in the reader's mind that a proper evaluation of brain wave charts, together with a proper administration of anti-convulsant drugs, would almost certainly cure epilepsy. This impression, of course, is false. The essence of the article was partially correct, but the inferences to be drawn by the public were inevitably wrong.

As a result of such articles, the laity is attempting to dictate its own treatment, using the physician only as a sponsor. So far little trouble has been caused but we must guard against an insidious, entering wedge. Utilization of his own best judgment has long been the sacred right and responsibility of the physician.

In concluding this report, be it known that genuine medical ignorance, neglect, laziness or gross commercialism in the practice of medicine is not to be tolerated by our wonderful profession.

F. A. ELY, *Chairman*.

REPORT OF THE COMMITTEE ON MEDICAL SERVICE AND PUBLIC RELATIONS

Last fall the American people definitely rejected plans in big packages which were socialistic in conception, but because socialism is intriguingly attractive to many people the issue is not yet settled. It is doubtful if those who are agitating the socialistic movement will try, at least for a few years, another frontal attack. They will probably be content to infiltrate our present form of government slowly through its weak spots until eventually in a few years they will have achieved their purpose. Our defense against such inroads is woefully lacking in aggressive constructive action designed to correct inadequacies in medical service. We have not kept pace with the rapidly changing times, partly because we have not had past experience in such undertakings and also because of indifference on the part of many physicians to the dangers which lie ahead.

During the past two years this committee has been committed to an imperative frontal attack on socialized medicine. Now we must repair our fences and, most of

all, show the people that we can produce some of the good things we promised to them if medicine could continue as a free enterprise.

No one can foretell what we must do in the year ahead but here are some of the problems which need our attention at once. Blue Shield and Blue Cross activities must be supported and not sabotaged by the profession. The average layman associates the doctors, hospitals, nurses and pharmacists as a team in the maintenance of public health and we must devise some plan for mutual understanding among these groups if we are to meet the questions and demands of the public.

Health is one of the main interests of people today and lay health groups are rapidly becoming popular; we cannot neglect to assume our rightful place as the leaders of these groups. The farmers, and labor and management have medical problems which in their own way they are trying to meet. We must offer them our assistance and invite them to bring their problems to us for discussion.

Only in recent years has medicine become publicity minded, but we are slowly learning that we cannot hide our light under a bushel. We welcome the recent gestures of cooperation by the radio and press who have come to us for several recent conferences on a code of cooperation which will include our profession as well as hospitals and nurses. Let us hope that in the coming year we can find the right kind of leaders to do the jobs which lie ahead, and most of all that cooperation necessary to achieve some action.

FRED STERNAGEL, *Chairman*.

REPORT OF THE COMMITTEE ON NECROLOGY

The Iowa State Medical Society lost 47 members through death in 1950, the youngest, Captain Donald S. Wilkins, 28, dying while in service with the Army in Korea. The oldest was 96 years of age.

Will the House of Delegates stand a moment in silence while the secretary reads their names.

Name	Town	Age
William R. Bates,	Fort Dodge	87
Watson W. Beam,	Rolfe	92
Bert A. Bowers,	Sioux City	72
Frank E. Boyd,	Colfax	83
Charles E. Buckley,	Blockton	73
Elwyn T. Butterfield,	Guthrie Center	40
Cora Williams Choate,	Marshalltown	78
Clarence P. Cook,	Des Moines	78
Ira N. Crow,	Fairfield	68
Benjamin E. Eversmeyer,	Muscatine	75
William J. K. Findley,	Sac City	91
James O. Ganoe,	Ogden	85
Otto H. Geeseka,	Mt. Pleasant	96
Charles F. Goltry,	Russell	88
Charles H. Graening,	Waverly	78
John F. Harp,	Prairie City	92
Maurice A. Healy,	Boone	73
James C. Hill,	Newton	72
Robert A. Hills,	Russell	68
William P. Hombach,	Council Bluffs	87
Jonathon Johnson,	Alden	73
James E. Kessell,	Des Moines	69
Thomas C. Knox,	Glenwood	66
Frederick G. Ladd,	Cedar Rapids	83
Ernest J. Lessenger,	New London	63
John F. Loosbrock,	Perry	61

J. Jay McCarl, Sac City 70
George H. Martin, Eagle Grove 67
Hervy F. Masson, Washington 66
Henry A. Meyers, Davenport 61
Thomas A. Moran, Melrose 73
Edward E. Morgan, Sioux City 57
Fred B. Morgan, Clinton 76
James J. Murphy, Cedar Rapids 73
Velura E. Powell, Red Oak 76
William S. Reiley, Red Oak 79
Earl O. Reynolds, Greenfield 59
Stephen Riess, Cedar Rapids 65
Frederick C. Schadt, Williamsburg 66
Jack E. Swegart, Maquoketa 29
LeRoy R. Tripp, Sioux City 64
William R. Van Duzer, Casey 65
Herman J. von Lackum, Dysart 88
Charles A. Waterbury, Waterloo 75
Clifford R. Watkin, Sioux City 60
Soren S. Westly, Manly 69
Donald S. Wilkins, Iowa City 28

C. A. BOICE, *Secretary of the Council.*

REPORT OF THE PUBLICATION COMMITTEE

The Journal of the Iowa State Medical Society in 1950 continued its efforts to assist Iowa physicians in keeping them informed both professionally and politically.

The State Journal Advertising Bureau, sponsored by the American Medical Association, upon whose efforts the financial condition of the Journal depends, is to be congratulated for its endeavor to renew and secure new advertising contracts. Each doctor can help the Journal as well as himself by patronizing those firms that advertise in the Journal and by mentioning the Journal in correspondence with firms supplying medical products.

As formerly, the March issue carried the program for the annual meeting of the Society. The April issue was contributed by the College of Medicine of the State University of Iowa. The transactions of the House of Delegates were presented in the official issue in July.

The Journal deficit this year was \$6,717.41, an amount in excess of previous years due to increased production costs. The total expenses for 1950 were \$1,135.83 more than that of the previous year and although the total Journal income was increased by \$159.50, this increase did not offset the expenditures. Hence the cost per member for the Journal was \$2.67. Because of rising publication costs, the Board of Trustees has awarded the Journal printing contract to a new publishing house beginning with January, 1951. With a change in publishers, the expense of the magazine should be lessened materially.

With the July issue, Mrs. Janet Fowler resigned the position of Assistant Editor and Miss Marilyn Clementsen took over her duties.

Several changes in the editorial staff of the Journal were appointed by the Board of Trustees effective as of January, 1951. They are: Managing Editor, Miss Mary McCord; Business Manager, Ransom D. Bernard, M.D. and Advertising Manager, Don L. Taylor. Dr. Everett M. George continues as Scientific Editor as previously.

The accompany table sets forth figures on the comparative cost of the Journal during the past three years:

	1948	1949	1950
Reading Pages	560	594	598
Advertising Pages	440	402	388
Percentage of Reading Pages ..	56%	59.6%	60.6%
Original Articles	77	72	65
Editorials	53	59	65
Total Journal Expenditure.....	\$22,598.32	\$22,144.94	\$23,280.77
Total Journal Income	\$18,898.91	\$16,393.78	\$16,563.36
Net Profit for Journal			
Net Expenditure for Journal..	\$ 3,699.41	\$ 5,751.16	\$ 6,717.41
Number State Society Members	2,424	2,482	2,516
Net Expenditure per Member .	\$ 1.526	\$ 2.313	\$ 2.669

EVERETT M. GEORGE, *Editor.*

Reports of Special Committees

REPORT OF THE BALDRIDGE-BEYE MEMORIAL COMMITTEE

The Board of Trustees of the Iowa State Medical Society has set aside the sum of \$1,800.00 for the Baldridge-Beye Memorial Committee to be used for loans to worthy medical students at the University of Iowa. The details and rules and regulations governing this fund have not yet been made but will be published when they are. This amount represents \$1.00 for every paid membership of the year 1951 and it is hoped the same amount may be made available each year.

J. W. AGNEW, *Chairman.*

REPORT OF THE CANCER COMMITTEE

The Cancer Committee has continued the past policy of working in close cooperation with the Iowa Division of the American Cancer Society and the Division of Cancer Control of the Iowa State Department of Health. One formal meeting of the committee has been held during the year to consider a proposal from the Iowa State Department of Health to conduct a survey of cancer incidence in the state. The proposal was approved by the committee and referred to the Council of the Iowa State Medical Society for acceptance or rejection.

FRED H. BEAUMONT, *Chairman.*

REPORT OF THE FRACTURE COMMITTEE

The Fracture Committee was not active during 1950 but it does contemplate having a series of four meetings throughout the state in May dealing with the treatment and handling of fractures.

F. G. OBER, *Chairman.*

REPORT OF THE COMMITTEE ON GENERAL PRACTICE

The Committee on General Practice of the Iowa State Medical Society presents the following report of its activities during the year 1950.

A joint meeting with the Committee on Medical Education and Hospitals was held at Hotel Savery August 6. The training of men for general practice was thoroughly discussed and the following points were mentioned:

- 1. We feel it is the obligation of the State University College of Medicine to furnish well qualified general practitioners for the state of Iowa.
- 2. There are several hospitals in the state where training programs for general practice could be set up and these should be encouraged.
- 3. The training for general practice must be flexible to

enable the graduate to obtain the type of training that will best suit him and his needs in his particular locality.

4. Since there is a shortage of interns, a two year internship and residency in general practice would give many hospitals more men and thus enable them to give better patient care.

5. It is our belief that preceptorships with active practicing physicians for a short length of time would definitely better qualify more men to do general practice.

It is our feeling that there is too much emphasis in teaching institutions in directing men into specialties and away from general practice. If the practice of medicine as we know it today is to survive, this trend must be reversed.

The chairman and other members of this committee have kept in contact with the general practice committee at the University College of Medicine. The general practice residents have been interviewed regarding their training which, on the whole, seems to be reasonably satisfactory.

Plans for 1951 are very uncertain due to the number of doctors that will of necessity have to enter the armed forces. We hope to encourage general practice residency training in several hospitals in the state and to encourage the University Hospital in Iowa City to offer a broader and more comprehensive training program.

CHARLES A. NICOLL, *Chairman*.

REPORT OF THE HEART COMMITTEE

The Heart Committee, consisting of Doctors Coulson, McQuiston, and myself as Chairman, was appointed by Dr. Thornton. The major function of the committee so far has been to clarify the purposes and undertakings of the Iowa Heart Association for the Iowa State Medical Society.

At the Centennial meeting in Burlington fears were expressed that the Iowa Heart Association had an ambitious program of setting up cardiac clinics throughout the state. This was looked upon in many quarters with great alarm. Your committee reports that the Iowa Heart Association has no such aim or designs. It merely requests that if any cardiac clinic is set up under local auspices and in the hands of regional physicians, it be established, if practicable, so as to meet the recommended standards and minimum requirements for cardiovascular clinics established by the American Heart Association. The reasons for using such criteria in establishing cardiac clinics have been demonstrated amply by previous experience.

Your committee suggests that if there is any further confusion or misunderstanding on the part of physicians in the state, they avail themselves of the opportunity to read in the cardiac section of Topics concerning the research and educational aspects of the program of the Iowa Heart Association.

Respectfully submitted for the Committee,

WILLIAM B. BEAN, *Chairman*.

REPORT OF THE HISTORICAL COMMITTEE

The result of the activities of the Historical Committee during the past year is the publication of "One Hundred Years of Iowa Medicine—In Commemoration of the Centenary of the Iowa State Medical Society."

Within this volume of 485 pages is encompassed the story of medical progress in this state as recorded in its annual proceedings from the first convention in Bur-

lington in 1850 to the Centennial session in the same city one hundred years later. Likewise it forms an interesting chronicle of the lives and achievements of many of its medical pioneers, the origin and development of medical education, of medical journalism, local society organization, hospitals, nursing, and public health through the hundred years.

The Committee desires to express its obligation and appreciation to the Board of Trustees, the officers and membership of the Iowa State Medical Society for their constant encouragement and valuable assistance in making this publication possible. It forms a record of inspiring progress and achievement of which Iowa Medicine may justly be proud.

The Historical Committee,

WALTER L. BIERRING, *Chairman*,

JOHN T. MCCLINTOCK,

CLYDE A. HENRY,

CHARLES L. JONES,

LESTER C. KERN,

EVERETT M. GEORGE,

CLYDE A. BOICE,

JEANNETTE DEAN-THROCKMORTON,
Secretary.

REPORT OF THE COMMITTEE ON INDUSTRIAL HEALTH

This report summarizes the subjects considered during the past year and at the same time is an indication of the activities to be pursued during the ensuing year.

The first meeting of the committee was held June 25, 1950, in Des Moines. The agenda consisted of six subjects for discussion:

I Program of the Council on Industrial Health of the American Medical Association for the Development of Local Industrial Health Services.

Committee Opinion

- (1) The program was endorsed; however, the committee felt it was first necessary to evaluate current industrial health practices in Iowa to determine the present needs. This information would then lead to suggestions for improvement.
- (2) It was felt that members of the Society should be contacted in order to determine which physicians in the state were providing full time or part time medical service in industry and which physicians were serving on an on-call basis and those that were caring for industrial patients in their private offices but not serving directly in an in-plant medical department. This study would thus provide an indication of current medical service to Iowa industry. The latter has not been done to date.

II Cooperation with the Industrial Division of the Iowa State Safety Council.

Your chairman has been appointed chairman of the Committee on Health and Hygiene of the Industrial Division of the Iowa State Safety Council.

To date, only one other committee member, the secretary, has been appointed. He is Mr. C. L. Campbell, Industrial Health Engineer of the Iowa State Department of Health.

III Workmen's Compensation Fee Schedule.

Committee Opinion

The committee felt that it would be desirable to

have a uniform Workmen's Compensation Fee Schedule established in this state. States that have such schedules in existence have kindly forwarded copies of their schedules to us. Edward L. Rohlf, M.D., Waterloo, is now studying this problem.

IV Iowa Health and Safety Act

Committee Opinion

The committee felt that Iowa has inadequate industrial health and safety laws. No action taken.

V Disability Evaluation Schedule

Committee Opinion

The committee felt that it would be desirable if Iowa had a uniform Disability Evaluation Schedule. Edward L. Rohlf, M.D., Waterloo, is now studying this problem.

VI Industrial Health Guides

Committee Opinion

The committee felt that it would be desirable if the Iowa State Medical Society, through the Committee on Industrial Health, in cooperation with the State Department of Health, developed a reference guide for the use of nurses and physicians serving industry.

Some preliminary thought has been given to this but no action has been taken.

The second meeting was quite impromptu and held November 17, 1950 in Des Moines. It was a luncheon called for the purpose of meeting with J. F. McCahan, M.D., Assistant Secretary, Council on Industrial Health of the American Medical Association, during his visit to Des Moines.

Dr. McCahan outlined some of the activities of the Council and indicated that the 11th Annual Congress on Industrial Health of the American Medical Association is to develop the concept that agriculture is an industry. A discussion of hand injuries occurring on the farm and other occupational problems will be discussed.

As you will see, there is a tremendous amount of time and effort required to handle some of these problems and these considerations are important. January 12, 1951, representatives of labor organizations met with the Iowa Industrial Commissioner in an effort to develop changes in our Workmen's Compensation Laws and an attempt also was made to develop a health and safety act. All of this, it is hoped, will be passed upon in the current session of the Legislature. We hope that the State Medical Society will be consulted before final legislation is adopted.

The Committee was saddened by the death in November of Dr. E. E. Morgan of Sioux City, one of its most active members. He will be missed because he participated in the planning and work of the committee.

HOWARD H. SMEAD, *Chairman.*

REPORT OF THE COMMITTEE ON MATERNAL AND CHILD HEALTH

The Committee on Maternal and Child Health has had but one meeting during 1950 due to the fact that there have been no problems presented to it for consideration and none that the members of this committee have raised themselves. There is no early prospect for work by this committee unless the present war economy forces the State Medical Society to revive its participa-

tion in a program similar to the EMIC one of World War II.

The one meeting was held on August 2, 1950 in the office of the State Medical Society in Des Moines, Iowa. Besides a portion of the members of that committee, Dr. Madelene Donnelly of the State Department of Health, Dr. R. D. Bernard and Mary McCord were present. The purpose of this meeting was to discuss Dr. Donnelly's projects for her department which she had assumed rather recently, and to ask for suggestions from the committee about any additional activities we would like to have her undertake.

Among decisions made was that the State Department of Health could set up a demonstration clinic for premature infants at Blank Memorial Hospital in Des Moines for the purpose of caring for such infants in that territory and for training nurses and physicians in their care. This would involve the use of federal funds in reimbursing the hospital and the nurses.

There was considerable discussion of immunization and school health programs. It was regretted that they seemed to be pretty much lay dominated but no definite answer was reached.

All decisions made by the Committee on Maternal and Child Health are recommendations to the Executive Council of the State Medical Society and subject to its approval.

C. P. PHILLIPS, *Chairman.*

REPORT OF THE COMMITTEE ON MENTAL HEALTH

One meeting of the committee has been held prior to this report. The decision reached at that meeting was that the committee should re-state its recommendations of last year; namely, that mental health centers be established at the local level wherever psychiatric services are available; and that they should be used for the diagnosis and treatment of early cases and the education of the community in the advantages of preventative mental hygiene.

It is further recommended that acute treatment accommodations be established at each state hospital as an integral part of every state institution's treatment facilities and should be used for all acute conditions admitted, regardless of the type of admission. The committee fully recognizes that this unit can in no way be considered adequate for screening of mental conditions of the entire state.

It is further recommended that facilities for treatment of mental conditions be established in general hospitals on a par with medical and surgical treatment in those hospitals in order that the medical practitioners in the state will see the advantages of early diagnosis and treatment of such mental conditions.

The committee, recognizing that mental hygiene is no different than physical hygiene, further recommends that the education of the public in mental hygiene should be a function of the State Department of Health as are physical conditions and that the division of mental hygiene in the State Department of Health be increased.

The committee recommends that the Committee on Mental Health be continued within the Iowa State Medical Society.

The committee is at present inspecting the four state mental institutions and will give a supplemental report covering the conditions found at the annual meeting.

JOHN I. MARKER, *Chairman.*

REPORT OF THE COMMITTEE ON NATIONAL EMERGENCY MEDICAL SERVICE

The National Emergency Medical Service Committee of the Iowa State Medical Society has not been too active to date. The chairman has attended a three day conference on burns as applied to civil defense and several other civil defense meetings. The Committee as such will be much more active in the spring of 1951, at which time the material from the medical manpower survey, conducted by the Iowa State Advisory Committee on Civil Defense, will be made available, also the Federal Civil Defense Administration manual, "Health Service and Special Weapons" will be available. With these two elementary brochures the committee on National Emergency Medical Service will have something with which to work.

JOHN W. FERGUSON, *Chairman.*

REPORT OF THE SCIENTIFIC EXHIBITS COMMITTEE

The Committee on Scientific Exhibits has tried to arrange for a large showing at the Sioux City meeting. So far it looks as if there would be about 35 exhibits. These will come from the College of Medicine at Iowa City, Mayo Clinic, Creighton, University of Nebraska, University of South Dakota, Hektoen Institute, and from physicians individually.

E. A. FULLGRABE, *Chairman,*
R. H. FLOCKS,
J. J. ROWE.

REPORT OF THE SPEAKERS BUREAU

This year, the activities of the Speakers Bureau parallel those of last year. Although there has been no particular increase in activity, we continue to receive the heart-warming cooperation of the doctors with our program. Speakers give their time and energy to attend meetings which they know from experience will be scantily attended. Often we have speakers from outside Iowa who work with the same good spirit, stimulated entirely by the desire to teach.

We continue to enjoy the funds made possible by special sources for our work. The cancer clinics have been enlarged by using money supplied by the Cancer Division of the State Department of Health and the Iowa Division of the American Cancer Society. In the clinics on diseases of the heart and chest, we were assisted by the Iowa Tuberculosis and Health Association, the Tuberculosis Division of the State Department of Health, and the Iowa Heart Association. We have received valuable assistance from both the State Department of Health and the Medical School at the State University of Iowa.

During 1950, six cancer clinics were held. The cities in which they were held were chosen on the basis of location, the object being to cover the state as much as possible. In each city we had enthusiastic help from the local chairman. The towns with cancer clinics in 1950 were Carroll, Sioux City, Washington, Dubuque, Waterloo, and Woodward. A total of 24 lectures were given, using speakers from the entire state, the medical school, and from adjoining states. The total attendance at these clinics was 260.

The object of these meetings remains the early detection and treatment of cancer. Audience reactions were very favorable with stimulating participation, generally in discussions of specific problems. These clinics are of

great value as they are an excellent means of swiftly and accurately bringing the most recent information to physicians.

The same can be said of the meetings emphasizing diseases of the heart and chest. They were held in Sioux City, Mason City, and Spencer. The heart and chest clinics are set up like the cancer clinics so that a maximum of teaching is given in a small amount of time. Four lectures were given at each town, two before dinner, beginning at 4:00 p. m., and two after dinner. With this arrangement there is very little interference with office hours.

Postgraduate courses were given in Charles City, Denison, Oelwein, Cherokee, and Mount Pleasant. The nature of these and other meetings has been somewhat altered because of the questionnaires sent out last year. We have attempted to include in our multi-topic programs, some discussion of basic principles to contrast with discussion of immediate clinical interest. The programs are arranged so that those attending will travel within a fifty-mile radius to the meeting. This again was done on the basis of doctors' answers to the questionnaire. However, this did not alter attendance significantly. One of the deterring factors of these meetings has been the cost of the meetings for the sponsoring county societies. It is our belief that the costs should be reduced to an absolute minimum for sponsoring counties.

We have obtained a great number of speakers for lay groups of all kinds—businessmen's clubs, women's clubs, church groups, and others. Requests for us to help the county societies obtain speakers has been sharply reduced since the main burden of finance has fallen on the individual society. During the coming year, the Speakers Bureau plans to prepare a list of Iowa doctors available to speak within the state. This will be of particular value to the county societies in planning their scientific programs.

Again this year, the Speakers Bureau has presented weekly broadcasts on health over Radio Stations WOI and WSUI in Ames and Iowa City respectively. These broadcasts have been prepared and delivered by the doctors in the state. They have proven to be of great value to the listening audience in Iowa. It is a difficult task for the average physician to prepare a talk which is of interest to a lay audience yet scientifically sound. We are indebted to the doctors of Iowa for their cooperation in making these programs successful.

The AMA has prepared several series of talks of the type that we use. These programs, arranged in groups of thirteen, last fifteen minutes each. They are prepared by the Bureau of Health Education and are made by radio professionals from authoritative medical sources. They include dramatizations, musical interludes, and interviews with outstanding experts. Since these series of talks are available to state medical societies, we are looking forward to using a set of these transcriptions for our radio talks starting in January. This is to be a trial rather than a permanent change.

We wish to thank those who have contributed their time and energy to our activities and hope for their continued support during 1951.

HAROLD MARGULIES, *Chairman.*

REPORT OF THE TUBERCULOSIS COMMITTEE

During the past year, the Tuberculosis Committee of the Iowa State Medical Society collaborated with the Speakers Bureau of the Iowa State Medical Society in

continuing and promoting the institutes on combined diseases of the heart and chest. At each of these institutes, which were held at Mason City, Spencer and Sioux City, four speakers were present, two of whom discussed some phase of the cardiovascular diseases and two some phases of pulmonary diseases. These institutes have been held for the past two years and in general have been very well received and very well attended.

We have also continued the custom of supplying a guest speaker to present a topic on some phase of pulmonary diseases at the annual meeting of the Iowa State Medical Society.

RAY J. HARRINGTON, *Chairman*
JOHN C. PARSONS
J. CARL PAINTER
LEON J. GALINSKY
R. E. SMILEY
WM. SPEAR
D. R. WEBB

Secretary Phillips: Mr. Speaker, I neglected to ask for approval of the minutes of the session on Wednesday morning, in 1950, in Burlington. That report was published in the July issue of the *Journal*, on page 355.

I move that the minutes be approved as published.

The motion was seconded, put to a vote and carried.

The Speaker: We will call now for supplementary reports. I believe the Board of Trustees has a supplementary report. The Chair recognizes Dr. Whitaker, Chairman of the Board.

SUPPLEMENTAL REPORT OF BOARD OF TRUSTEES

The trustees are assuming and hoping that each one of you has read our report as published in the Handbook.

We have tried at the last two sessions of the House, at each district meeting last fall, and in the *Journal* to picture to you frankly the business side of the Society, feeling that the past three years have presented problems with which every member should be familiar.

This morning we want to make a short supplementary report and in this we desire to emphatically re-emphasize two facts. First: that the Iowa State Medical Society has become very, very big,—big in its many activities and big in the size of the budget required to operate these activities. Second: you gentlemen, and you alone, have the power to say whether you desire these activities to continue with a resulting large budget or whether you want some of them eliminated. If the latter, then which ones should be cut to decrease our overhead? We as Trustees do not make policies; we act in an administrative capacity, carrying out insofar as we are able the demands of the State Society. We respectfully and urgently request that the House study carefully the reports of the various committees and their activities and then if you have any directives, we will abide by them.

We will not take time this morning again to go over the figures, charts and graphs which show the Society's growth the past few years, but if any one does have questions, any of the trustees, the General Manager or Miss McCord will gladly answer them.

Now as to the future. Apparently we have won the first battle but the war is far from won and the best advice we can get is that organized medicine has a constant fight ahead for several years. Hence, we as a Society will be compelled to maintain a strong, efficient,

and united organization, along with the other states, in order to preserve the practice of medicine as we have known it.

We feel right now that we have developed a very efficient organization, with Dr. Bernard as General Manager and only he and the officers I believe, realize what a big load he is carrying; with Mary McCord as Executive Secretary, Don Taylor, Field Secretary and a competent office personnel. They are doing a superb job of handling the volume of work going through the state office.

During the past year the President, President-Elect, Secretary, Treasurer and more recently the Chairman of the Council, have been invited to attend each trustee's meeting and almost always all have been present. To this group the General Manager makes his monthly report on all activities of the Society. We find this a great help in correlating the work and making decisions.

A most healthy sign to us has been the rejuvenation of the Council under the leadership of Otis D. Wolfe as Chairman. This means a lot as the Council is the most democratic part of our organization and keeps the grass roots in touch with the central office.

Another very healthy sign is the large number of younger men who are taking an active part in the Society's affairs. As you recall one of the requests we made of Dr. Bernard when he was engaged was that he make a special effort to get younger men indoctrinated into the workings of the Society.

Within the past month, a man who has done as much, if not more than any individual for the Society in his work with Blue Shield, came to us and told of the problems it was facing. We asked how we could help and his reply was to ask for the loan of Don Taylor for a year during which interval he would devote most of his time to Blue Shield, organizing a Department of Doctor Relations. We felt we could not refuse Dr. Olsen's request and so Don started his new work April 1. It was our feeling Don could indirectly do the Society more good this way than any other and incidentally with Blue Shield assuming some of his salary and expense, it is going to help somewhat our own budget.

As trustees, we see the mechanics of the Society working and know who are actively carrying the load,—a load which has become heavier the past few years. Consequently, we would urge you in your selection of officers and committees, to choose men not only able, but also who can and will give of their time. The coming year will be a busy one and an office now carries much more with it than simply the honor.

B. T. WHITAKER, *Chairman*
R. N. LARIMER
L. A. COFFIN

Dr. Whitaker . . . : Mr. Speaker, we have further supplementary reports. I would like at this time to ask permission of the House to extend the privilege of the floor to the General Manager, in order that he may give a supplementary report.

The Speaker: If there is no objection the Chair will rule that the General Manager may have the privilege of the floor. Dr. Bernard, you have that privilege.

Dr. Whitaker: Before Dr. Bernard speaks, we have another supplementary report, a little different from the charts and figures we usually present to you. It is more on the personal side.

We know that no society can get along unless we

have loyal, hard-working members. We hope that this next section of our supplementary report will meet with sufficient favor so that it may be continued in the years to come.

I am going to ask Dr. L. A. Coffin, one of the Trustees, to present the second part of the report. After that Dr. Bernard will finish our report.

Dr. L. A. Coffin: Will Dr. M. I. Olsen and Dr. C. A. Boice come forward, please?

Mr. Speaker and members of the House of Delegates, it is a great pleasure, as a member of the Board of Trustees, to read and present these letters to these two very fine gentlemen of the medical profession.

"Martin I. Olsen, M.D.

1049 36th Street
Des Moines, Iowa

"Dear Dr. Olsen:

"On behalf of the members of the Iowa State Medical Society, the Board of Trustees wishes publicly at this time to express to you our sincere appreciation of the many hours of time and thought you have given to the furtherance of our insurance plan.

"Practically single-handed you worked out the details of our Blue Shield plan, and almost without assistance you have built it up from its first few claims to the record it holds today.

"Not every member of the State Society knows how much time you have given to the organization of the company and to its successful functioning. We as Trustees have been privileged to work and counsel with you, and we realize how deep our debt is to you.

"As we start our second hundred years of existence we wish to thank you for the good work you have started. You have made it possible for many citizens of our State to meet their medical needs more easily, and have smoothed the path of our physicians by providing Blue Shield coverage, which is paying them so well at the present time.

"We hope you will accept this letter as our expression of an award for distinguished service rendered your fellow physicians, carrying with it the thanks and appreciation of every individual member.

"Sincerely yours,

"BOARD OF TRUSTEES."

"C. A. Boice, M.D.

"Washington, Iowa

"Dear Dr. Boice:

"On behalf of the members of the Iowa State Medical Society, the Board of Trustees wishes publicly at this time to express to you our sincere appreciation for the many years of effort you have given to your medical organization. Your record of service far surpasses that of most of us. Your term as a member of the Council probably will never be equalled.

"Not only have you worked for your State Society, but you have done much for your local organization, setting up the county health unit and making Washington County nationally recognized for advances in maternal and child health.

"We are starting our second hundred years at this meeting, and it is only fitting that we pause at this time and acknowledge our gratitude to you, who have helped so much during the last fifty years. Your influence has been a good one, and will leave its impression on the years to come.

"We hope you will accept this letter as our expression of an award for distinguished service rendered your fellow physicians, carrying with it the thanks and appreciation of every individual member.

"Sincerely yours,

"THE BOARD OF TRUSTEES."

The Speaker: Thank you, Dr. Coffin. How nice it is to know that there is a bit of mellowing softness in the hearts of those flinty old men. I think our Society should be congratulated because it recognizes two of our outstanding men.

The Chair recognizes Dr. Bernard.

Dr. R. D. Bernard: Mr. Speaker and members of the House, this is a brief résumé concerning those "flinty old men," the Board of Trustees.

BRIEF RESUME OF MY ANNUAL REPORT TO THE BOARD OF TRUSTEES

I assumed the office of General Manager of the Iowa State Medical Society June 1, 1950. I was employed by the Board of Trustees and have been under their immediate direction and supervision. Through the me-

dium of frequent detailed reports, attendance at all Trustees' meetings, bi-monthly calls to the office by the Chairman of the Board and frequent telephone calls to the Chairman, the General Manager and the Board have maintained a close liaison. My activities have been authorized and decisions checked.

As an ex-officio member of all of the committees of the Society, except the Grievance Committee, I have been privileged to meet with the various committees of the Society and observe our committee activities and functions and assist them in most of those activities.

Three additional temporary committees have been appointed by President Thornton: A polio committee which cooperates with the State Polio Committee; a Committee on Professional and Hospital Relations, which was established at the San Francisco meeting of the A.M.A. and must be made a permanent committee. There has been no work for this committee but it will be continued as a subcommittee of the Committee on Medical Service and Public Relations. The third is a committee to assist in the preparation of a new coroner bill.

As a member of the Board of Directors and public relations committees of both Blue Cross and Blue Shield, coordination of the activities of these organizations with those of the State Society has been one of my major activities. In June, Mr. Tom Garbett was transferred to Blue Shield to establish a much needed Claims Department and more recently Mr. Don Taylor was loaned to the Blue Shield to establish a department of Physicians Relations.

I have been active in contacting the Social Security Board in an effort to carry out directions of the Council. I have cooperated in the many activities of the interprofessional organization and have developed an excellent spirit of cooperation between the president and faculty of the University of Iowa Medical School.

The Trustees authorized me to develop a television program over WOI-TV. This is one of the largest assignments and as soon as the hundreds of details have been worked out, this program will be placed in the hands of a committee.

The details of my report concerning the Speakers Bureau should have special attention and I respectfully request an opportunity to appear before the Reference Committee with a supplementary report and a similar request is made concerning my extensive studies of the various health programs now in Iowa.

In the reorganization of the personnel of the *Journal*, you will note that the General Manager's position has been added to my activities.

National legislative work, formerly handled by the General Manager as a member of the Committee on Medical Service and Public Relations, will soon be given to the young men who have been trained for this work.

Due to the illness of Dr. Reeder, I have done much work for the Woman's Auxiliary and I am sure you are familiar with the re-activation of the Council.

Contacts with the health work at the Extension Department of Iowa State College at Ames; the Farm Bureau; labor groups (Iowa Tuberculosis Association, Iowa Cancer Society and polio organizations) and other lay organizations too numerous to mention have required much attention as well as the many personal problems of individual members of the Society present.

I wish to extend my sincere appreciation for the fine

cooperation I have received from the officers of the Society and to thank the members for their marvelous support and cooperation.

R. D. BERNARD, *General Manager*.

The Speaker: Do the Trustees have a further supplementary report?

Dr. Whitaker: No, sir.

The Speaker: The supplementary report of the Trustees and the report as printed in the Handbook will be turned over to the Reference Committee on Reports of Officers. It will report on Wednesday morning concerning the recommendations.

Supplementary reports of other committees are now in order. Is there a supplementary report from the Committee on Constitution and By-laws?

Dr. G. C. Albright: Mr. Speaker and members of the House of Delegates, I move that Section 10, Chapter IX of the By-laws, as printed in the Handbook of the House of Delegates, be rejected at this time. It is printed on page 68.

Dr. Boice: I second the motion.

The motion was put to a vote and was carried unanimously.

Dr. Albright: Your Committee further recommends that the following be adopted as a new Section 10, Chapter IX:

"The Committee on Medical Service shall consist of at least seven members. It shall work with the Council on Medical Service of the American Medical Association, and shall have for its responsibility those matters which are concerned with medical service, specifically medical economics, medical insurance, medical care programs, and such matters as would logically fall within its province."

In explanation, may I suggest that this is done at the request of the Board of Trustees, to conform more closely to the same Articles and By-laws of the American Medical Association.

I therefore move the adoption of this report as the first reading today.

The motion was seconded, put to a vote and was carried unanimously.

The Speaker: This will be referred to the Reference Committee on Constitution and By-laws, but properly can be voted upon finally (because it is a By-law) at the next session of the House.

Dr. Albright: I also wish to make a supplementary report on behalf of the Medicolegal Committee, of which Dr. F. A. Ely is Chairman:

During the past year F. C. Huebner, who has been officially designated as the legal counsel for the State Society, has passed away. Inasmuch as the Medicolegal attorney is used very little, the Medicolegal Committee would like to recommend that local attorneys be employed to defend such cases as come before the State Medical Society. Therefore, I am reading the following as given by Dr. Ely:

"After consultation with the other members of the Committee, we decided to call attention to the fact that F. C. Huebner, who has been officially designated to attend our legal-medical affairs, has passed away, leaving the position vacant. Inasmuch as we are infrequently called upon to participate in defense of our members, we respectfully suggest that we believe it better in the future to select legal counsel for each individual case, and not have any one attorney.

"There are advantages inherent in this provision. First, the adaptation of a defense attorney who, be-

cause of his association and locality, may be admirably adapted to the individual situation. Second, it makes possible the distribution of the service.

"The only possible disadvantage might be in the matter of controlling the fees for service. As a matter of fact, the records will show that the defense of our members has not been expensive, and there is no reason why a tentative understanding cannot be had with an attorney employed by us on the individual case basis."

Mr. Speaker, I move that this be referred to the Reference Committee on Medicolegal Matters.

The Speaker: This supplementary report will be referred to the Committee on Legislation and Public Relations. It will be reported out on Wednesday.

Are there further supplementary reports?

Dr. J. W. Ferguson: Mr. Speaker and members of the House, your Committee on National Emergency Medical Service has been pondering at great length on how it can best cooperate and help Dr. W. L. Bierring's Advisory Committee on Civil Defense. With that thought in mind, we would like to make a few recommendations:

First, that administration of civil defense be with the Iowa State Department of Health, since it is the only organization with adequate personnel and funds.

Second, that professional training and standardization of therapy for atomic bomb casualties be under the direction of the Iowa State Medical Society, and that such training be in the form of two- or three-day courses held in large, easily accessible centers in the State, in order to obtain a greater dissemination of professional information. Funds for such a program should be requested by the Iowa State Medical Society from the State of Iowa.

Third, that the *Journal of the Iowa State Medical Society* should supplement the training program with short, concise, practical articles on atomic energy. The *Journal* should be further used as a means of keeping the profession advised on the general subject of civil defense, its problems and its aims, so that all doctors will take a more active and intelligent part in the civil defense activities of their communities. Thank you.

The Speaker: This supplemental report of the National Emergency Medical Service Committee will be referred to the Reference Committee on Legislation and Public Relations.

Dr. W. L. Bierring: Mr. Speaker, may I have the privilege of the floor to make a few remarks regarding that report?

The Speaker: May I have the unanimous consent of the House to listen to the Commissioner of Health?

Dr. Bierring: Mr. Speaker and members, thank you for the privilege of making just a few remarks regarding the program of the Health and Medical Division of Civil Defense.

As you know, the Legislature has not appropriated any money for the purpose of defraying expenses attendant upon our civil defense program. We have reactivated the old Civil Defense Act which prevailed during World War II, which carries an appropriation of \$20,000 a year. You will recognize this is a small appropriation when we consider the neighboring State of South Dakota has just appropriated \$100,000 a year and all of the surrounding states that much and more.

Therefore, in the further operation of our civil defense program we will have to rely entirely, or to a large extent, upon Dr. J. W. Ferguson's committee and upon the medical profession and allied professions, who

in times of emergency in the past have come forward with both time and effort. Therefore, you should understand the organization that we have established.

There is appointed in each county a medical director of civil defense. He has been selected by the local county society. He is your representative. We also have through the State Society designated eleven district directors, who will act in a coordinating capacity and an advisory capacity with reference to the counties in their particular district.

There are three projects that must be carried out—great projects. First of all, we must encourage first aid training. The goal of the American Red Cross is 20 million, or one out of every eight persons. That would mean 300,000 people in this State, and at least one adult in every family or group of persons should take this training.

While this training is going on it will be necessary to form first aid teams or ambulance teams. They will have to be organized first from those who have had previous first aid training, but subsequently every member of this first aid team must have had first aid training. That will comprise a number of physicians, dentists, nurses, nurses' aides, stenographic help, litter bearers, and so on. The size of these teams will depend very much upon the locality.

The present purpose of the civil director, Mr. R. Q. Selby, is that the six so-called target areas shall form an organization in which the outlying counties will become a part of that area for mutual assistance purposes. That will take up about half of the counties in the State. In the intermediate area there will be formed so-called mobile units, which can be transferred in any direction where help is needed.

The ambulance teams that will be formed will have two purposes. One will be for local mutual assistance and the other for mobile purposes. Those can be of varying sizes, according to the number of litter bearers. If there are 50, 75, 100 or 150 litter bearers, as the *Blue Book Manual* provides, they will be organized in every town of 1,000 and 2,000 or more.

The third purpose—and in this you as members of the Society must take part and cooperate with your local medical director—is to organize your hospital services. That means that there must be an organization in which will be determined various purposes. First is the evacuation of patients. How many can you handle in an hour and evacuate from a hospital? Then it must be determined which services can be carried on in the hospital and which will be available for field service.

It is these three purposes that must be carried out, and carried out soon: First aid training, ambulance teams and organization of hospital services. Subsequent services, such as the organization of blood banks, of supply depots for drugs, mortician services, casualties, and so on, will also be handled. We must remember we will be dealing with a new kind of warfare. We have the first effect of the new kind of bomb as a blast which is much greater and which causes much more trauma and much more destruction of physical property. Again, we have heat, which is 20,000 times greater than that of former types of bombs and which would cause an immense number of burns. Lastly, we have the radiological effects which injure tissue.

Three training courses have been developed so far, one for the purpose of training the county directors, in which we held the first course in Iowa City a few

weeks ago, on the radiological aspects of atomic warfare. We have a very fine program being arranged by Dr. N. A. Womack for Friday and Saturday of next week, on the modern treatment of burns. He has brought together five of the outstanding authorities in the country. These lectures will be recorded and will be subsequently edited. We hope in that way to have a valuable bulletin for reference, through which to develop some uniform method for the treatment of burns.

Nurses are being trained in this work, and six additional courses will be held in six areas of the state, training other nurses to be subsequent teachers so that they can carry this method of training as far as possible to the nursing profession.

You will remember that we had announced a nurse registration on March 26. The Governor announced it, and it has now been completed. We hope to have that in the hands of all the local directors so that you may know exactly what nursing personnel may be available in case of emergency.

Thank you very much.

The Speaker: We allowed Dr. Ferguson to jump the gun a bit in his report. We will back up and ask the Legislative Committee if it has a further report.

Dr. F. C. Coleman: Mr. Speaker, we have a short supplementary report.

REPORT OF THE LEGISLATIVE COMMITTEE

Mr. Speaker, Members of the House of Delegates and Members of the Iowa State Medical Society:

Your Legislative Committee has had three major interests during the past year. The first interest was the development of a statewide legislative organization. This organization was built with the cooperation and assistance of the county medical societies, for each county medical society designated one of its members to act for it in legislative matters. I am happy to report to you that there is such a legislative representative in every county.

The second major interest of the Legislative Committee was the November 7 election. With the assistance of the Legislative Contact men, all candidates for the Legislature were interviewed and a report made on each of them. From these reports the Legislative Committee was able to determine which of these candidates should be supported by the Iowa State Medical Society. The Legislative Committee interviewed the candidates for the other State offices. Relations established through these personal contacts have proved very valuable during the Legislative session.

The third interest, and a very important interest, was the Legislative session which closed this past Friday. This Legislative session required frequent meetings of the Legislative Committee.

We set as our goal the improvement of public relations, both with the legislature and the public, without sacrificing the best interests of our Society and its members. We believe that this goal was achieved, as not a single major fight involving the Medical Society developed on the floor of either House, and the doctors were not subjected to criticism on the floor of either House at any time. Anticipating trouble and preventing it through conferences and interviews with the proper parties proved very successful.

All of you received a Legislative Bulletin at the beginning of the spring recess of the Legislature, which included a résumé of bills affecting the Society and its members. This Bulletin was issued with two thoughts

in mind. First, to acquaint you with what was going on in the Legislature and second, to ask for your advice on these matters. We deeply appreciated the letters from the many physicians who responded. We want to serve you in the most effective manner and suggestions or criticisms are very welcome, not only during the Legislature, but at any time.

Some of the bills affecting you will now be reported briefly. There were several bills which dealt with the definition and limitation of medical practice. Although no move was made to disturb the Basic Science Law, a bill was drawn at the instigation of some chiropractors who were not members of the Iowa Chiropractic Association redefining the practice of chiropractic. This bill would have permitted chiropractors to engage in medical practice, especially in the field of physical medicine and minor surgery. Introduction of this bill was prevented. During the last two days of the session, a chiropractor, also not a member of the Iowa Chiropractic Association, attempted to block the approval by the Senate of men to the Basic Science Board, who, in our opinion, had done a fine job. His efforts were unsuccessful. Another bill would have transferred the Board of Medical Examiners to the Secretary of State. This bill, although introduced, was not considered. Another bill would have nullified the authority of the Iowa State Medical Society in selecting the candidates for appointment to the Board of Medical Examiners. The Legislative Committee received very fine support from the Legislative contact men and this bill was not reported out of Committee. A bill which would remove the requirement of a homeopath on the Board of Medical Examiners was passed. A municipal code bill which introduced the possibility of licensing of professional men by municipalities was amended, removing this possibility.

Workmen's Compensation laws were altered providing for prostheses when needed. The limits for medical and hospital care for compensation cases were altered so that for unusual cases the industrial commissioner might allow an extra \$1,000 for either hospital or medical bills. Another bill providing for panels of doctors in industrial plants did not pass. A minimum wage bill stayed in committee as did a fair employment practices bill.

Several mental health bills were introduced. Some of them were withdrawn and others were not considered. One bill did pass, however, as an amendment permitting the Board of Supervisors to contract for psychiatric care either within the county if services were available or if not available, in adjoining counties. A county health unit bill was not reported out by the Senate public health committee.

Board of Social Welfare bills included (1) providing for total disability similar to that provided by Federal law (HR 6,000). This was a very poorly drawn bill. It did not pass. Another bill would have made some changes in the care of the blind so that optometrists could both diagnose and treat eye diseases. This did not pass. The Coroner bill was amended in the House in such a way that its intent would have been lost. It did not pass.

The University of Iowa received \$6,300,000, which was considerably less than their asking. The University Hospitals appropriation was raised almost \$1,000,000 after a plea on the floor of the Senate which pointed out the competition afforded by the new Veterans Hospital with the possibility of closing some of the University Hospital beds because of lack of funds.

The Rh bill providing for compulsory Rh tests remained in committee. The Civil Defense bill did not pass.

State taxes were kept at practically the same level. Income taxes were retained at $\frac{3}{4}$ but the marital splitting provision, although recommended by the Senate Tax Committee, did not come to a vote. Increases may be expected in local taxes as provisions for increases in several mileage rates were made.

A bill in the House providing for legal immunity of non-profit hospitals except in cases of gross negligence did not receive a constitutional majority and failed to pass the House.

These bills have been covered rapidly to conserve your time but we believe you want to know about them. If more detailed information is desired, we will be glad to discuss them now or in conferences with individual delegates. As I close this report, I wish to thank Dr. Bernard who has given us guidance when we so frequently needed it, Miss McCord, who has worked with us constantly, the office staff, the members of the Legislative Committee, the Legislative contact men and all of you for your very fine support and assistance.

Mr. Speaker, I ask the permission of the House to present our legal counsel, Mr. I. W. Myers, who has done a magnificent job in representing us. Mr. Myers has a few remarks he would like to make.

F. C. COLEMAN, *Chairman*
J. W. BILLINGSLEY
R. J. STEVES
T. F. THORNTON
A. B. PHILLIPS

The Speaker: This supplementary report of the Legislative Committee will be referred to the Reference Committee on Legislation and Public Relations.

Mr. Myers, you have the privilege of the floor.

Mr. I. W. Myers: Mr. Speaker and members of the House, I appreciate this opportunity.

First I want to thank all of the doctors who helped us during the legislative session and particularly I want to thank Dr. F. M. Roberts and Dr. E. S. Parker who served in the Senate. I hope more doctors will run for the legislature. We need you as citizens serving in that body. We are also going to have to be alert in watching federal legislation. Socialized medicine is still an issue and the forces that are working for it have not relaxed their efforts; they have just changed tactics and are working by indirection.

The Speaker: Does the Grievance Committee have a supplemental report?

REPORT OF THE GRIEVANCE COMMITTEE

The following is the report of the Grievance Committee to the House of Delegates of the Iowa State Medical Society in regular session April 23, 1951, at Sioux City:

The Grievance Committee of the Iowa State Medical Society, which was organized at the last state convention held in Burlington in April, 1950, held its inaugural meeting in Des Moines May 22, 1950. The committee is composed of 11 members—one from each councilor district. The meetings are held in Des Moines, usually on the last Sunday in each month. Nine meetings have been held. The attendance has

been very good. There have never been less than eight of the eleven members present.

A review of the types of cases was printed in the March *Journal*. In all, 40 cases have been submitted. Most of the complaints or grievances were reasonable. Two or three were most unreasonable. Of these 40 cases, one case had to be dropped as it went to court; 24 of the cases have been settled; three are practically settled; and 12 remaining cases are active and unsettled.

In quite a few cases the people involved were very appreciative of the efforts of the Committee and so stated in the correspondence. This applies to physicians as well as to lay persons. In three or four of the cases the people involved would not cooperate in supplying the necessary data and so these cases had to be dropped.

By and large the cooperation of the medical profession has been excellent. One physician felt abused and picked upon because he was asked for some information although he *was not* the one against whom the grievance was directed.

One physician has been almost 100 per cent non-cooperative and he *was* the person against whom the grievance was lodged. With one exception, he would not even favor the Committee with the courtesy of a reply to numerous letters.

At the conclusion of the first year's activity, only one physician has been cited to the Executive Council for contempt or disciplinary action.

The committee feels that it has done a good work and urges that this committee should continue to function with a yearly turnover of at least one half of its members.

E. M. KERSTEN, *Chairman*.

The Speaker: This supplementary report will be referred to the Reference Committee on Legislation and Public Relations.

Is there a supplementary report of the Committee on Medical Education and Hospitals?

Dr. F. H. Entz read the report of the Committee on Medical Education and Hospitals as prepared by Dr. G. H. Scanlon.

REPORT OF COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

This is my fifth annual report to the House of Delegates on Medical Education and Hospitals. The committee this year consisted of Dr. L. F. Hill of Des Moines, Dr. F. H. Entz of Waterloo and myself.

This report deals entirely with the problems of medical education and the hospitals. Dr. Hill, Dr. Entz, and I had a long conference with the Dean's committee with all members being present and the following points were discussed:

- (1) The over-emphasis on specialization.
- (2) The possibility of working out some form of rotating internship with graduates or undergraduates.
- (3) The steps necessary to direct medical students into the field of general practice.
- (4) The problems of the medical school in regard to: (a) Adequate salaries for preclinical men; (b) Cramped and inadequate space for out-patient teaching, office space, etc.

With regard to the over-emphasis on specialization, this becomes not only a local problem but one of national scope. Let us review briefly some recent facts

on this subject. What brings about the desire to specialize and what conservative measures are necessary to curb this desire? To refresh your memory, I will again quote from Dr. Victor Johnson's report. Dr. Johnson is director of the Mayo Foundation for Medical Education and Research.

"Specialty training has expanded at a staggering rate in the past few years. Early in the war everyone anticipated a tremendous increase in the postwar demand for residency training by physician veterans, many of whom participated in the accelerated medical school program and had their hospital training curtailed. During and since the war, the Council on Medical Education and Hospitals sought to stimulate, assist and co-ordinate the activities of various groups, organizations and institutions throughout the country seeking to meet these demands, while still preserving an acceptable quality of training. The demands have exceeded even the most extravagant estimates. In 1941 there were 2,256 approved residency positions. Today there are 15,172, three times the prewar number. With these large numbers of physicians in specialty training, and with unprecedented numbers desiring certification by the American boards, serious thought must be given to the question, 'How many specialists in the various fields do we need in this country?'"

"The apparent simplicity of this question is misleading, since the complications are numerous. For example, what is the proper sphere of practice of the specialist in pediatrics, internal medicine, or obstetrics, as related to the general practitioner of medicine? Or, to what extent should anesthetics be given by physicians or specialists rather than qualified nurses? Furthermore, some specialists practice in more than one field: a neurologic surgeon usually does some neurology, a neurologist is likely to combine his work with psychiatry; and various combinations of ophthalmology and otolaryngology are common. Recognizing all these and other complicating factors, the author recently put this question to all members of all the American boards. Opinions expressed varied widely. Yet it was possible to formulate a rough first approximation to the possible number of specialists which might be required, from the opinions of more than 100 members of the various American boards, each expressing himself for his own specialty.

"The total figure which resulted was 52,800 specialists in all fields possibly required for the best medical service to the people of this country. At the time this study was under way, the United States Public Health Service also sought to estimate the number of specialists required in this country by an entirely different approach. It applied the existing full-time specialist population in those twelve states of the country which are most generously supplied with physicians, to the 1960 estimated population of the entire country. The figure for total specialists needed in 1960 was 56,299. Since the 1960 population has been estimated at about 7 per cent more than that of 1948, it would seem fair to reduce the United States Public Health Service figure of 56,299 for 1960 to about 7 per cent less, or about 52,300 for 1948.

"It could not have been anticipated that estimates of required specialists made by such different methods would yield results so similar; by the method of combining opinions of many specialists, it appears that nearly 53,000 specialists might be needed; by the method of extending the numbers of full-time specialists in the 12 best-supplied states to the entire country, it seems that more than 52,000 would be required.

"What is the current specialist population available to meet this estimated need? Here again, approximations must suffice. Of the 31,498 specialists certified by the American boards to March 1, 1948, perhaps about 29,000 are still alive. Adding to this figure the additional number of physicians who are not certified but limit their practice to a specialty (about 13,000) and a fraction (perhaps one third) of the 25,000 physicians who give special but not exclusive attention to a specialty (equivalent to about 8,000), we arrive at a total specialist manpower of about 50,000 now at work in this country. If only one third of the present 15,000 residents become specialists, the required number estimated will soon be exceeded, even allowing for deaths of specialists in the meantime. If the estimates of about 52,000 required specialists is an approximation to the truth, it may be that our present total specialist population approaches or equals the optimal number for the best medical care.

"Thus it would appear that the present great volume of residency training should appreciably decrease in many fields. Indeed, it must decrease, unless 90 per cent of future medical graduates take three years of residency work in specialties, which is highly unlikely and equally highly undesirable.

"If we assume for the moment that about 52,000 specialists are needed and about the same number are now or will very soon become available, we should retain a sufficient number of the best residency programs, to (1) replace losses by death and retirement, and, (2) possibly increase somewhat the total number, especially in certain fields."

Statistics of the past five years or more show that 50 to 51 per cent of the graduating classes go into gen-

eral practice, 30 per cent in specialization and 19 per cent in the army, navy or Public Health Service.

Now let us analyze specialization. The discouragement of general practice comes in the first year internship when the intern discovers that the general practitioner is not admitted on the hospital staff and cannot bring his medical, obstetrical or surgical cases into the hospital but must refer them to a specialist. At the same time, he sees the specialist doing case after case for a handsome fee and he feels he would like to do the same. He does not stop to realize the years it may have taken that particular man to work his way up and how many others have tried and were lost in the shuffle. The conditions just mentioned are prevalent in the states east of the Mississippi River and particularly the east coast. These conditions do not exist to any great degree in the middle west but there is again a tendency toward them on the Pacific coast.

Another dominant influence, and unquestionably the greatest offender, is the armed forces of our own Government where men with specialization are offered higher rank and greater pay, even to the bonus extent. The Veteran's Administration falls in the same category. Therefore, with such influences, can you and I justly place the blame entirely on our medical faculty for the lack of general practitioners?

In discussing the great need for interns in our various hospitals, Dr. Hill emphasized the following: "Of the present graduating classes at Iowa City, few remain to take their training in Iowa. Most want to go to a large city, or to a large teaching hospital or to a center where a large out-patient experience can be had. The result is that a disproportionately small number of doctors trained at state expense at Iowa City remain in Iowa, and still fewer go into general practice. Furthermore, it is acknowledged that Iowa City is at a disadvantage compared to medical schools in large cities with respect to numbers of out-patients. Yet there is a source of out-patients in Iowa in the larger cities which could be made available if a suitable program could be worked out. For instance, Methodist and Blank Hospitals in Des Moines are approved by the Council on Medical Education and Hospitals for intern and resident training. Two year internships in general practice are offered and yet there have been no applications for this type of service in 1951, and only one intern out of nine appointments came from Iowa City. It would seem worthwhile to make an attempt to keep more of the doctors who graduate from Iowa City in Iowa for their internships. One possible way of making such internships more attractive would be a combined training program between the private hospital staff and the University. Staff men from the University might visit the hospital at regular intervals, say once a week, for the purpose of holding a clinic and making a talk. The staff of the hospital and any other doctors in the surrounding area could attend. In this way the internship could be strengthened and the medical education in the whole area where the hospital was located would be stimulated. In time, fourth year medical students could also be brought into such a program. While an undertaking of this sort would require funds and personnel, still its ultimate advantages to the state would seem worthwhile."

The Dean's committee told us that such ideas were under consideration at the present time but no concrete action could be taken until the Government de-

cides whether or not the medical school would be put on an accelerated program.

Our committee became deeply interested in some of the medical school's vital problems.

The need for financial support from the legislature is for the preclinical staff whose salaries for the assistant professor and the associate professor range as low as \$4,000.00 to \$6,000.00. Additional men in these departments are sorely needed but due to lack of funds cannot be procured.

The problem of space for teaching, particularly in the out-patient clinic, was emphasized. There is a great need in this department for more space so that it can be utilized for teaching purposes. It is the teaching in the out-patient clinic which most closely resembles the procedure in general practice.

The crowding in the isolation wards due to the influx of polio cases was a handicap to patients, nurses and doctors. The Dean's committee feels that research programs are essential in every medical school and deserve attention but they should never encroach on clinical care and clinical practice.

In conclusion, I wish to draw a summary of my five years' experience on this committee. These observations and suggestions are not mine alone but are those of the various members of the State Society who have served with me. Our suggestions would be as follows:

(1) A strong, competent Dean who works with the executive committee but who has full power to act.

(2) It appears to those of us who have been studying and observing the present system that the school is severely handicapped in that it pays heads of departments from \$20,000.00 to \$25,000.00 only, and under the present system this cannot be changed. It seems to us that this system discourages extremely competent men from considering the position as department heads. This should definitely be remedied.

(3) There should be a committee appointed for a three year term to discuss with the Dean and the executive committee the various problems pertaining to the medical school. This committee should assist them with their legislative problems and advise them on setting up a top-flight department for the training of general practitioners.

We have seen our school go from a democratic institution governed by a dean to one with a socialistic trend, brought about by circumstances of inequality and by a few men with definite socialistic ideas. During this transition unfortunate events occurred. Good men were lost, personalities dealt in, and the school sank to a new low. Fortunately, the stable men of the faculty began to adjust many of the errors. At the same time the State Society took great interest in this problem and under its leadership offered a supporting hand. The fruits of these efforts will begin to show in the very near future. We are sure if the above suggestions are carried out in a few years we will have a medical school second to none.

G. H. SCANLON, *Chairman*

L. F. HILL

F. H. ENTZ

The Speaker: The first portion of this report as read by Dr. Entz, will be referred to the Reference Committee on Public Relations. The second portion of the report, which is the report of the special committee created by resolution of the House of Delegates last year, will be submitted by Dr. Thornton.

President Thornton: Mr. Speaker and members of the House: As perhaps all of you recall, this House last year asked that a committee be formed, and specified the personnel of the committee as being Dr. D. C. Conzett of Dubuque; Dr. B. T. Whitaker, Chairman of the Board of Trustees; Dr. G. H. Scanlon, Chairman of the Committee on Medical Education and Hospitals and your President.

We wish at this time to give a report and ask for a continuance of this committee.

SPECIAL COMMITTEE REPORT

After the annual meeting last year, and following your instructions, your special committee contacted the Board of Education requesting an audience. This was granted at a date to be agreed upon later.

We felt before this conference, we should be well informed regarding all the problems so that we might have some definite recommendations to make to the Board. Consequently throughout the year, jointly and individually, conferences were held with the president of the University, the chairman of the majority report, the chairman of the minority report, various staff members and the so-called Dean's or Executive Committee, which, in the absence of a Dean, is the administrative body of the school.

We are happy to report that since the Burlington meeting, the relationship between the school and the State Society has improved markedly and the best cooperation for years now exists. Since that was the main purpose of this special committee, we feel that a major part of our work has been done. For this reason, we again contacted the Board of Education, informing it of this cooperation, and while there were still some unsolved problems, we requested they hold the invitation open until some later date when it would be mutually advantageous for a meeting.

Our reason for this is that we feel the University's Executive Committee is trying to do a good job and cooperate with us; however, there are some divergent viewpoints, especially in the matter of a Dean. We feel such an appointment is desirable in order to accomplish all the purposes the school should fulfill. Therefore, we suggest the House continue the committee with the same personnel for another year, as they are familiar with the problem.

T. F. THORNTON, *Chairman*
D. C. CONZETT
B. T. WHITAKER
GEO. H. SCANLON

The Speaker: The report will be referred to the same Reference Committee on Legislation and Public Relations, and final action will be taken on Wednesday. The Medicolegal Committee has reported. Is there a supplementary report from the Committee on Medical Service and Public Relations?

Dr. Sternagel: No, sir.

The Speaker: At this time I will ask that the members of the House stand while Dr. Phillips, the Secretary, gives the necrology report.

Secretary Phillips: This report includes only those members who passed away during the year 1950. Those who passed away in 1951 will be included in next year's report.

(The House stood in silent tribute while Secretary Phillips read the report of the Necrology Committee.)

The Speaker: Are there further supplementary reports from any of the listed committees?

Secretary Phillips: We have a report from Dr. J. I. Marker, Chairman of the Committee on Mental Health. Dr. Marker was unable to attend and asked that I read this report.

REPORT OF THE MENTAL HEALTH COMMITTEE

A member of the Committee on Mental Health of the Iowa State Medical Society visited Clarinda State Hospital, Cherokee State Hospital, Mount Pleasant State Hospital and a meeting of all three members was called at Independence State Hospital. The Committee interviewed the Superintendent of each hospital and completed a report modified from the Standard American Psychiatric Association report on hospitals studied by them.

No effort is made in this report to compare the staff or services of the individual hospitals. The following observations pertain to all of the hospitals:

There are varying degrees of overcrowding, running from 16 to 26 per cent over the rated physical capacity.

From the standpoint of adequate personnel the overcrowding is more noticeable as in each institution there is a shortage of psychiatrists, graduate nurses, trained attendants, psychiatric social workers and psychologists to service adequately a fraction of the rated capacity of each hospital. From 25 to 44 per cent of hospital deaths are autopsied which speaks well for the activity of the laboratory services.

The buildings and individual rooms and wards are well maintained and as clean as the physical fitness of the plants permits. Many of the buildings are obsolete in each of the hospitals and varying degrees of fire hazard are present. The prevention of a serious fire disaster with present physical plant will only be avoided by alert, well trained management and personnel conscious at all times of their responsibility.

In three of the hospitals an acute department is erroneously designated as a screening center, probably because patients are received on a voluntary basis. No figures were obtainable as to types of cases accepted either from the standpoint of clinical diagnosis or ability of the patients or relatives to pay for the service. Both considerations will be important in future observations of the activity of these departments.

With present inadequacy of the care of the psychotic by the state, should it enter into the care of psychoneurosis which in many instances receives as adequate a care from private physicians? Private psychiatrists in the state outnumber those of our state institutions and it is a doubtful benefit to burden the state with cases which can be cared for privately as efficiently, professionally and economically as by the state.

The experience of the state in attracting adequately trained psychiatrists demonstrates that increased salaries alone will not attract sufficient qualified psychiatrists. Other considerations are proper living quarters and opportunities for advancement professionally.

Affiliation of our state hospitals with general hospitals and educational institutions for the training of resident psychiatrists, nurses, psychologists and social workers is a must for the future program of mental care in the state. When such a training program is available, psychiatric training should be a part of any good general internship.

The future studies of this committee should be

concerned with adequacy of treatment of psychotic patients and the measures, both public and private, to prevent, detect and treat early mental illness. Failure to provide early treatment has produced many long time custodial cases and will permit many more to develop in the future. The providing of early mental treatment should be of interest to every physician of the State even though his special interest is in the medical or surgical field.

J. I. MARKER, *Chairman*
H. C. MERILLAT
L. B. SEDLACEK

The Speaker: This supplementary report will be referred to the Reference Committee on Legislation and Public Relations.

Dr. E. M. George: I have a supplemental report of the Publications Committee.

SUPPLEMENTAL REPORT OF PUBLICATIONS COMMITTEE

The Publications Committee would like to make an optimistic report. We think things are looking up with the *Journal*. Surely all of you have noticed the new cover on the April *Journal*, with "Iowa" in larger letters. As these *Journals* go out all over the country people will know that at least Iowa has a *Journal*.

In addition, we have made a change in our publishing center, with quite a considerable saving in cost. Therefore, it is hoped that the deficit we had last year will be largely eliminated.

Also, the service of D. L. Taylor in selling advertising throughout the state is going to help us a great deal. We are still trying to put out a *Journal* that you want, that will have in it the things you want to read, and we welcome your suggestions.

The Speaker: The Chair recognizes Dr. W. L. Biering for a short statement.

Dr. Biering: I simply would like to call the attention of the members of this House and other members of the Society to the fact that extra copies of the Centennial volume, *One Hundred Years of Iowa Medicine*, will be available for sale at this session, at a price of \$2.50 per copy, which is about 25 cents above the printing cost.

It has been acknowledged that this volume has some historical value and every local library ought to have a copy. We enlist your interest.

The Speaker: Are there any other supplementary reports of committees? If not, the Chair recognizes the Secretary for the reading of communications.

(Secretary Phillips read the list of applications for life memberships.)

LIFE MEMBERSHIPS

The following applications for life membership are made on the basis of 50 years practice and 30 years membership. All have been checked and are eligible.

Black Hawk, H. W. Clasen of Cedar Falls
Cedar, J. E. Smith of Clarence
Chickasaw, P. E. Stuart of Nashua
Clinton, C. T. Bigelow of Clinton
Dickinson, W. E. Bullock of Lake Park
Fayette, E. S. Kennedy of Oelwein
Grundy, W. O. McDowell of Grundy Center
Jones, F. B. Sigworth of Anamosa
Keokuk, C. L. Heald of Sigourney
Marshall, G. M. Johnson of Marshalltown

Page, J. W. Sellards of Clarinda
Palo Alto, H. F. Givens of West Bend
Scott, W. S. Binford of Davenport and J. D. Cantwell of Davenport
Story, L. F. Richardson of Collins
Wapello, E. G. Barton of Ottumwa.

The following have been recommended because of disability and retirement:

Boone, F. H. Creamer of Boone
Butler, Bruce Ensley of Shell Rock
Cerro Gordo, C. B. Tice of Mason City
Cherokee, C. W. Ihle of Cleghorn
Des Moines, P. H. Schaefer of Burlington
Johnson, J. M. Chittum of North Liberty, E. D. Plass and A. H. Woods of Iowa City
Keokuk, Tarana G. Dulin of Sigourney
Polk, C. L. Chambers, Nelle S. Noble, H. L. Rowat of Des Moines and W. E. Sanders of Long Beach
Pottawattamie, C. F. Baumeister of Avoca.
Scott, W. F. Bowser of Davenport
Union, J. G. Macrae of Creston.

Secretary Phillips (continuing): Mr. Speaker, I move that the physicians whose names I have just read be accepted as life members.

The Speaker: They have all been authenticated?

Secretary Phillips: Yes, sir.

Dr. T. D. Kas: I second the motion.

The motion was put to a vote and was carried unanimously.

Secretary Phillips: Mr. Speaker, I have a letter from the Iowa State Auxiliary:

"I wish to express my thanks and appreciation to all of you for the courtesy shown me this past year. It was a privilege and a pleasure to attend the district meetings of the Medical Society and personally meet many of you at these meetings, and in the State office.

"As an officer of the Woman's Auxiliary of the Iowa State Medical Society I shall earnestly endeavor to fulfill any activity I may be asked to do. I wish for you another successful year in your activities.

"Sincerely yours,

"MRS. HOWARD W. SMITH,

"President-elect."

I think we ought to give her a hand. She has done a marvelous job.

This is a letter from the Polk County Medical Society:

"By action of the Executive Council of the Polk County Medical Society, taken the evening of March 27, 1951, we recommend Dr. Malcolm A. Royal for his diligent service as Secretary of the State Board of Medical Examiners, and give unqualified endorsement of him for reappointment to that Board.

"E. M. KINGERY, *Executive Secretary.*"

The Speaker: The next item of business is the consideration of the individuals for the General Practitioner's Award, which we are introducing this year for the first time. There have been submitted three applicants, and if those proponents of the proposed applicants for the Award will come forward and mention them briefly, the individuals' names will be submitted to the Reference Committee on Resolutions and New Business. I believe at this time the House should hear a brief summary regarding these individuals.

Dr. O. D. Wolfe: I have not submitted a written report, but I would like to submit an oral report.

Dr. R. A. McGuire: We suggest the name of Dr. Roy G. Swinney, of Jefferson County. He has been unanimously selected by our county and the surrounding counties. We ask your consideration of Dr. Roy G. Swinney, of Richland, Iowa. He is now suffering from

an incurable disease, but he is still carrying on in his office.

The Speaker: Thank you, Dr. McGuire.

The Chair recognizes Dr. O. D. Wolfe, of Marshalltown, followed by Dr. A. F. Fritchen of Decorah.

Dr. Wolfe: Mr. Speaker and members of the House, I would like to recommend Dr. G. M. Johnson, of Marshalltown. He is up for Fifty Year membership this year. Dr. Johnson was President of the Marshall County Medical Society. He has held every office in the county society. He has been a member of the School Board for many years, a member of the YMCA Board and has served on almost every community project. He is a very humble man and a very fine practitioner. I think if the teaching of Hippocrates exists in any of us today, it exists in Dr. Johnson. The only reason that I would not like to see him receive this award is because it would embarrass him.

Dr. Woods: I wish to corroborate everything Dr. Wolfe has said about Dr. Johnson.

The Speaker: Thank you, sir.

Dr. Fritchen: I am recommending Dr. F. A. Hennessy, general practitioner, who was former President of the Iowa State Medical Society and who has given a great deal of his time to organized medicine.

The Speaker: Miss McCord will make mention of the next candidate.

Miss Mary McCord: Fremont County has nominated Dr. A. E. Wanamaker, of Hamburg, and has submitted this book filled with records from the citizens of the community, and various organizations supporting his nomination. Dr. Wanamaker has practiced there for over 50 years.

We have the same sort of booklet submitted for Dr. Swinney, of Richland, I might add.

The Speaker: The last candidate I shall mention only briefly. He was to have been nominated by Dubuque County for Clayton County. He was Dr. F. J. Kriebs. Dr. Kriebs, 91 years old, was buried last Thursday. This rather elaborate booklet on Dr. Kriebs was submitted by a committee from Dubuque County. We will submit this booklet to the Reference Committee in the hope that possibly they may come out with a resolution to be sent to Dr. Kriebs' family.

The Council, by unanimous action last spring, requested that a member of the Association of American Physicians and Surgeons appear on this program. I am very happy to report that such a representative is here today, and I will ask Dr. E. B. Howell to present the gentleman to the assembly. Dr. Howell.

Dr. E. B. Howell: Mr. Speaker, members of the House of Delegates, and members of the Iowa State Medical Society: As voiced here today by our President and President-elect, we have a job to do as doctors in fighting the regimentation and socialization that is going on in this country. I would estimate there are about 100 people in this audience today. You are not the ones who need the inspiration. To do this job we have to do it from a grass roots standpoint. We all recognize that.

To stimulate this interest in individuals, it requires various approaches. We have done a good job. The American Medical Association and the State Society have done a good job but you fellows who have worked with the individuals out at the grass roots—the councils, the secretaries of societies—know what a job it is to get everyone interested and to get information to all of them. What will appeal to one man may not appeal to another.

In 1943 a group of men in Indiana had the same idea and so they established what is known as the Association of American Physicians and Surgeons, for the purpose of public relations and information.

Today we have with us a doctor from Indiana, Dr. James L. Doenges and Dr. Denton Kerr from Houston, Texas. They are both practitioners. Dr. Kerr is a gynecologist and Dr. Doenges is a general surgeon. I would like to have you listen to them for a few minutes, because I know they have a message for you.

Dr. Denton Kerr: Mr. Speaker, delegates and gentlemen: After listening to these inspirational reports this morning, I am almost forced to go back to my attitude toward Association of American Physicians and Surgeons a few years ago. I couldn't see its benefit; I couldn't see that it was needed. But finally we were sold on it in the State of Texas, and we did endorse it in principle. We have seen to it that the State Medical Association and AAPS stay an equal distance from each other and do not overlap.

There is no one in the American Medical Association nor in organized medicine who is concerned about the trends toward socialism more than I. In every state in the Union, if doctors are fighting it as you are doing in Iowa, I doubt seriously whether we would need an AAPS. However, in organized medicine we can only fight things that pertain to medicine primarily; but the AAPS can go further. It can go out and fight other socialistic agencies without being ameliorated by the socializers.

You are going to hear a few things that AAPS has tried to do. I hope you will listen wholeheartedly, and then in the end I hope you see fit to endorse it in principle.

In Texas we have a lot of men who never work with the State Medical Association, in which I am very active, but we can stimulate them through AAPS. They spend hundreds of dollars and days and days of time working against socialistic legislation. I know that work is needed, and I hope you see fit to endorse the AAPS in principle.

Dr. J. L. Doenges: Dr. Thornton, Dr. Conzett, distinguished members of this august body of the Iowa State Medical Society: I regard it as an extreme privilege to be here and to be allowed to take a few minutes of your valuable time to present a program that means a great deal to the doctors of this country. The program of AAPS, as Dr. Kerr has stated, is in no way, shape or form antagonistic to, contrary to, or overlapping with that of any other established medical organization.

I have been quite inspired, as has Dr. Kerr, by the remarks we have heard this morning by your President, your President-elect and your Council, by Dr. Entz mentioning the fact (which we feel very deeply) that even in our medical schools a certain amount of teaching in favor of socialism has crept in. We know that to be a fact. In my state of Indiana we know that is true.

I might state that endorsing the objectives and principles of the Association of American Physicians and Surgeons it does not require membership on the part of any member of your State Society. Naturally, we would like you to join it and work with us, just as you work with your State and national medical organizations. Likewise, those of you who do join have the same privileges you have in your county societies. You may withdraw at will.

This organization, although only eight years old,

has received the official endorsement of 16 state medical societies. One reason why we do not have more endorsements can be explained simply: Dr. Kerr and I, and the rest of us who work with the organization, do not have the time to go to all of the state societies. We have practices, and we have to make a living, just as you do. No doctor in the American Association of Physicians and Surgeons receives one cent of remuneration for his services to that organization. We take these trips at our own expense. The men who work with and for this organization do so because they believe in it and in its principles.

Many of our objectives cannot be discussed in detail this morning. We encourage, as does your organization, the wide application of voluntary health insurance principles, trying to explain on a patient-physician basis the importance of full utilization of things which are voluntary and which support the fundamental principles of American government. We are absolutely opposed to those things that are compulsory.

I am certain that your legal counsel would agree that in all probability S-54, introduced by Representative Dingell this year, will never receive public hearing. S-1679 took such a beating last year that its successor, which is almost a direct copy but which will be introduced every year as long as there is a copy, will not have a public hearing.

But the fringe bills are eating into the picture. There is federal aid to nurses' schools, federal aid to medical education—and, quoting the celebrated decision read by Justice Jackson in 1942 in the case of *Wickard vs. Filber*, "It is hardly undue process for government to regulate that which it subsidizes."

One thing that is of utmost importance, and which you gentlemen very obviously know, is this: You are citizens first. You were citizens before you became doctors. Your obligation is to your community, to your fellow men. That obligation is enormous.

If you do not believe in compulsion and coercion and collectivism, you should oppose, as individuals and in any groups you can, all of those collectivistic trends which are tending to take over each and every segment of our economy and every segment of our people. It is all part of the plan to establish a state of coercive collectivism in these United States.

I do want to make this very clear: The AAPS is not a scientific body. We feel that the American Medical Association, the state medical societies and the specialty associations, incorporate all the scientific organizations that are required at this time.

The AAPS conducts, each year, an essay contest in high schools. The title of this is, "Why the Private Practice of Medicine Furnishes this Country with the Best Medical Care." Our national prize is about \$1,675. Many states offer state prizes. Counties offer \$250 in prizes to encourage students to enter the contest. We supply them with package libraries to give them background material in writing their essays. We feel it is valuable. We don't talk just about freedom of medicine—we point out all the way through that if this country is to survive, every segment of our economy must be free; that you cannot establish a sea of socialism with a few islands of freedom and have them long survive. I wish I had the time to read some of the letters that have come to us from all over the United States, telling us about the change in attitude on the part of students after working on this contest.

There is another thing that we think is of the ut-

most importance: We know that in our medical schools there is a tendency to accept some of the principles and some of the tendencies toward socialism. I use the word "socialism" very freely, because that is what it is—government control of our economy.

At the present time we are trying to expand very rapidly a system of supplying these medical students with the information they want and need. We are doing this by making arrangements to finance the Association's *Newsletter* to every medical student, intern and resident in the United States, monthly. This *Newsletter* is one of the services we give each individual doctor who belongs to the organization. It is very concise and definite. It never compromises with principle. If something is wrong, gentlemen, it is wrong. There is no compromise with evil—and government control, collectivism of any kind, is evil. We believe that sincerely. There is one principle of the AAPS which we sincerely believe, will never have to be placed into action if our other programs succeed. That is the principle of non-participation. Members of the Association pledge themselves and their fellow physicians that they will not participate in a system of government controlled medicine. We also pledge that we will continue to deliver the highest caliber of medical care that we can to our patients as private patients, but we will refuse to regard them as wards of the federal government. There will be no withdrawal of services.

We believe that doctors who will continue to care for their patients without accepting government subsidy will see that they can prove their point. They will be duty bound to prove the point that individual doctors, shouldering the full responsibility, cannot be beaten.

We do request and hope very sincerely that you will see fit to join the doctors in the 16 other states that have given state endorsement to our principles and objectives.

The annual convention of this organization will be held in Indianapolis on October 4, 5 and 6 of this year. The program will be totally devoted to a discussion of the principles of freedom and liberty which have made this country great. Outstanding speakers from all over the United States will be in attendance to discuss those principles with you. We will welcome you all with open arms, whether you are a member or not.

If you do decide to endorse these principles and objectives, we naturally would be very happy if you would decide also to work in the organization. The membership is only \$10 a year. It is wholly voluntary.

I thank you kindly for your time.

The Speaker: The House is now open for new business.

Dr. C. O. Adams: Mr. Speaker and members of the House of Delegates, many of us were in the military service during the recent war, and there observed rather flagrant waste of medical manpower, duplication of medical facilities and equipment.

There was a definite move, following the war, for unification of the armed services and, supposedly, of the medical services for the armed forces. This has not been pushed, therefore, the delegates from the Cerro Gordo County Medical Society have been instructed to prepare a resolution and present it to you today. I would like to read it to you:

"The Iowa State Medical Society is in favor of unification of the medical services for the armed forces of the United States, and directs its delegates to the

American Medical Association to urge a similar resolution by that Association."

I move, Mr. Speaker, that this be referred to a committee for further consideration.

The Speaker: This resolution will be referred to the Reference Committee on Resolutions and New Business. Is there further new business?

Dr. C. T. Maxwell: It has recently been called to my attention that a certain bill has been introduced into the Congress making it possible for men in professions, or not otherwise covered by social security, to lay aside a certain amount each year in government bonds, on a tax-free basis, and to utilize those bonds when they retire or are otherwise out of practice.

This seems to have a considerable amount of merit on the face of it. I have not seen the bill, but by request I am introducing the following resolution:

"WHEREAS, there is now in the Congress of the United States a bill which would permit professional persons, not covered by the social security law, to buy government bonds which they could hold tax-free, until such time as they are ready to retire, and

"WHEREAS, it might be highly desirable to make such a plan possible for physicians; now, therefore, be it

"Resolved: That this House of Delegates ask the Legislative Committee to investigate and study this bill (introduced by Mr. Cowdray) and, if it feels the bill is worth while, ask the American Medical Association to have all state societies encourage their congressmen to favor such legislation."

I move that this be referred to the proper committee.

The Speaker: This resolution will be referred to the Committee on Resolutions and New Business.

Dr. J. G. Fellows: Mr. Speaker, I have a resolution:

"WHEREAS, the employees of the Iowa State Medical Society have been serving our membership in an unusually creditable and loyal manner, and

"WHEREAS, one employee of outstanding competency has served us for 17 years, and

"WHEREAS, it would seem desirable to induce other competent employees to give long continued service to our Society, and

"WHEREAS, many competently managed business firms have found pension plans to be economically sound and feasible, and

"WHEREAS, it would seem to be, on the one hand, fair and proper and, on the other hand, not unreasonably costly, to provide a retirement income plan for lay employees who retire after many years of service because of sickness or advancing age; now, therefore, be it

"Resolved: That the House of Delegates recommend to the Board of Trustees of the Iowa State Medical Society that the matter of the adoption of a pension plan for lay employees be explored; and be it further

"Resolved: That the House of Delegates approve the adoption of such a pension plan should the Board of Trustees and other officers of the Society find it economically feasible."

The Speaker: This will be referred to the Committee on Resolutions and New Business.

Is there further new business? If not, the time is at hand for the election of a Committee on Nominations. I would suggest that if the various districts have not already held their caucuses, they do so immediately, and that they surround themselves around the

district councilor in appropriate parts of this rather spacious room.

Following the selection of your member of the Nominating Committee we wish that each nominee would present himself at the desk for instructions and for the securing of a place and time of meeting and organization.

May I further ask that, as mentioned in my original remarks, the chairmen of the various reference committees meet with me immediately after this session closes. The rooms where these four reference committees will meet will be in this building and will be posted later in the day. These reference committees will be expected to meet tomorrow morning.

The Speaker: If there is no further business, the Speaker will entertain a motion for adjournment until Wednesday at eight o'clock.

Dr. Adams: I so move.

Dr. Kas: I second the motion.

The motion was put to a vote and was carried unanimously, and the meeting adjourned at 12:15 p. m.

MONDAY AFTERNOON, APRIL 23, 1951

A special called meeting of the House of Delegates convened at 4:45 p. m., Dr. D. C. Conzett, Speaker, presiding.

The Speaker: This is a short meeting to take care of one of the by-laws that we were unable to handle this morning. Without a roll call we will assume that those present this morning are here now. The Speaker recognizes Dr. G. C. Albright.

Dr. Albright: Mr. Speaker and gentlemen, if you will turn to page 90 of the House of Delegates Handbook you will see the reason for this action.

Under "Standing Committees of the House of Delegates" the Speaker is Chairman of the Committee on Arrangements and is not a member of the House of Delegates. The Chairman of the Legislative Committee is not a member of the House of Delegates. The Chairman of the Committee on Medical Education and Hospitals is not a delegate. The Chairman of the Medical College Committee is not a delegate.

Therefore, we propose the following amendment to Section 1, Article IX of the By-laws. Following the word "necessary" in Part 1 of paragraph 1 of Section 1 of Article IX of the By-laws, insert the following sentence: "Members of the Society who are not members of the House of Delegates may be appointed to serve on any of the above standing committees."

That is in an effort to legalize the appointment of any member of the Society on a committee of the House of Delegates.

Mr. Speaker, I present this for its first reading.

The Speaker: This change will be referred to the Reference Committee on Constitution and By-laws and will be formally presented at the regular session on Wednesday, at which time it may be adopted.

Dr. Albright: The second matter is this: Please open your Handbook to page 66. You will note that Article II of the Constitution, Article III of the Constitution, Article IV of the Constitution, Article V of the Constitution, Article VI of the Constitution, and Article X of the Constitution all were to have their final votes at this meeting of the House of Delegates.

The approval of the minutes this morning did not constitute a vote. Therefore, Mr. President, I move that these Articles, as recommended in the Handbook, be adopted.

Dr. C. H. Stark: I *second* the motion.
The motion was put to a vote and was carried unanimously.

The Speaker: Is there any further business to come before this special session? If not, the House is declared adjourned until eight o'clock Wednesday morning.

[The meeting adjourned at 4:50 p. m.]

WEDNESDAY MORNING, April 25, 1951

The meeting reconvened at 8:10 a. m., Dr. D. C. Conzett, Speaker of the House, presiding.

The Speaker: Gentlemen, the House is declared in session. The Secretary will call the roll.

Roll call showed the following persons present:

DELEGATES

Audubon—L. E. Jensen
Benton—J. E. Blumgren
Black Hawk—T. L. Trunnell
Black Hawk—C. D. Ellyson
Black Hawk—H. A. Bender
Boone—W. H. Longworth
Bremer—O. C. Hardwig
Buchanan—R. L. Knipfer
Buena Vista—H. E. Farnsworth
Cerro Gordo—C. O. Adams
Cerro Gordo—J. E. Houlahan
Chickasaw—P. E. Gardner
Clay—E. E. Munger
Clinton—R. F. Luse
Clinton—R. T. Lenaghan
Dallas-Guthrie—H. W. Smith
Davis—R. Schoonover
Delaware—H. H. Ennis
Dickinson—T. L. Ward
Dubuque—D. F. Ward
Emmet—J. P. Clark
Hamilton—F. F. Hall
Jasper—J. W. Billingsley
Johnson—R. H. Flocks
Johnson—E. F. Van Epps
Johnson—E. W. Paulus
Lee—L. C. Pumphrey
Lee—R. L. Feightner
Linn—C. H. Stark
Linn—F. G. Murray
Linn—G. R. Andre
Lucas—Dean Curtis
Lyon—G. D. Bullock
Madison—I. K. Sayre
Marion—H. L. Bridgeman
Marshall—D. D. Harris
Marshall—O. D. Wolfe
Montgomery—Oscar Alden
O'Brien—T. D. Kas
Page—G. H. Powers
Plymouth—W. J. Brunner
Pocahontas—W. F. Brinkman
Polk—M. T. Bates
Polk—T. A. Bond
Polk—R. F. Birge
Polk—Fred Sternagel
Polk—H. C. Bone
Polk—D. H. Kast
Polk—W. D. Abbott
Polk—R. A. Dorner
Polk—F. M. Burgeson

Polk—W. B. Chase, Jr.
Pottawattamie—F. N. Weber
Pottawattamie—C. V. Edwards
Pottawattamie—R. M. Collins
Sac—L. B. Amick
Scott—J. H. Sunderbruch
Scott—W. C. Goenne
Scott—George Braunlich
Sioux—E. B. Grossmann
Story—J. G. Fellows
Story—J. D. Conner
Tama—C. W. Maplethorpe
Taylor—G. W. Rimel
Union—H. G. Beatty
Wapello—C. A. Henry
Wapello—W. C. Wolfe
Warren—L. E. Hooper
Webster—E. M. Kersten
Winneshiek—A. F. Fritchen
Woodbury—E. M. Honke
Woodbury—P. L. Bettler
Woodbury—C. T. Maxwell
Woodbury—J. W. Bushnell
Wright—G. E. Schnug

ALTERNATES

Allamakee—C. R. Rominger
Appanoose—E. E. Edwards
Clarke—H. N. Boden
Decatur—K. R. Brown
Des Moines—C. J. Lohmann
Dubuque—J. W. Lawrence
Grundy—W. O. McDowell
Johnson—S. E. Ziffern
Johnson—W. M. Kirkendall
Kossuth—D. L. Bray
Mills—E. C. Magaret
Osceola—F. B. O'Leary
Palo Alto—H. L. Brereton
Polk—M. I. Olsen
Polk—E. D. McClean
Van Buren—J. T. Worrell
Webster—C. J. Baker

STATE SOCIETY OFFICERS

President—T. F. Thornton
President-elect—D. C. Conzett
Secretary—A. B. Phillips
Trustee—B. T. Whitaker
Trustee—R. N. Larimer
Trustee—L. A. Coffin
Councilor—C. C. Hall
Councilor—C. H. Cretzmeyer
Councilor—M. T. Morton
Councilor—W. L. Downing
Councilor—H. A. Householder
Councilor—C. A. Boice
Councilor—E. B. Howell

The Speaker: The Chair recognizes the chairman of the Committee on Nominations for his report.

Dr. Wolfe: The Committee has a supplementary report which we do not wish to forget, which will be read at the conclusion of the election.

The following candidates have been nominated by your Committee:

President-elect—Dr. Ben T. Whitaker; Dr. E. B. Howell.

First Vice President—Dr. Martin I. Olsen.

Second Vice President—Dr. Charles L. Jones.

Trustee—Dr. John W. Billingsley.

Speaker—Dr. Eugene E. Smith.

Vice Speaker—Dr. Charles P. McHugh.

Secretary—Dr. Allan B. Phillips.

Treasurer—Dr. N. Boyd Anderson.

Councillors:

First District—Dr. Cluley C. Hall.

Fifth District—Dr. Ernest M. Kersten.

Tenth District—Dr. Ivan K. Sayre.

Eleventh District—Dr. Oscar Alden.

Delegate to the American Medical Association—Dr. Gerald V. Caughlan. Alternate—Dr. Donovan F. Ward.

The Speaker: You have heard the nominations, gentlemen. Are there further nominations from the floor for the office of President-elect? If not, I will ask the following men to act as tellers: Dr. Houlihan, Dr. Dorner and Dr. Bender. They will please come forward and distribute the ballots.

Dr. E. B. Howell: Mr. Speaker, I want to thank the Nominating Committee for placing my name as a nominee, but I am perfectly satisfied with the job I have. As you know, I am Councilor from the Ninth District, and that is where I prefer to work.

Therefore, Mr. President, I move that the Secretary be instructed to cast a unanimous ballot for the other nominee, Ben Whitaker.

The motion was duly seconded, was put to a vote, and was carried unanimously.

The Speaker: Mr. Secretary, please cast the ballot as ordered. I will ask Dr. Fellows and Dr. Longworth to escort the new President-elect to the platform. While they are coming up I will ask if there are any further nominations for the office of First Vice President.

Dr. Boice: Mr. Speaker, I move that the Secretary be instructed to cast a unanimous ballot for the balance of the ticket as reported by the Nominating Committee.

Dr. H. A. Housholder: I second the motion.

The motion was put to a vote and was carried unanimously.

The Speaker: The officers as designated by the Nominating Committee are duly elected for the coming year.

In my hurry to begin the meeting we neglected to hear the reading of the minutes of the Monday session. I will call upon the Secretary at this time to read those minutes.

Secretary Phillips: First, Mr. Speaker and members of the House, I cast the unanimous ballot of the House as instructed for the officers as nominated.

The minutes of the meeting of the House of Delegates, on Monday, April 23, 1951, are as follows.

[Secretary Phillips read the minutes.]

The Speaker: Gentlemen, you have heard the reading of the minutes of the Monday session. What is your pleasure?

Dr. Housholder: I move the minutes be approved.

The motion was severally seconded, was put to a vote, and was carried unanimously.

The Speaker: Will the gentlemen now bring forward the new President-elect? Gentlemen, your President-elect, Dr. B. T. Whitaker.

[The audience arose and applauded.]

Dr. Whitaker: All I can say is "Thank you." I wish I had the silver tongue of our Speaker so that I could put into words what is in my heart this morning. I feel that my being up here this morning is more of

an approval of the work of the Trustees in the last few years than it is a personal tribute, and I feel the other two men should be up here with me taking the bows.

What I am trying to say is that what we have accomplished has been done through the cooperation and the close working of all members of the Board, Dr. Woodward and Dr. Sternberg, and more recently those two grand fellows, Bob Larimer and Lonnie Coffin.

I pledge you that I will try, in the next year or two, to work with the new President, the Board and all the officers, to see if we can increase our unity and efficiency.

Again, I thank you very, very much.

The Speaker: The Chair recognizes the Chairman of the Reference Committee on Reports of Officers, Trustees and Secretary. Dr. J. W. Billingsley.

REFERENCE COMMITTEE ON REPORTS OF OFFICERS, TRUSTEES AND SECRETARY

Dr. Billingsley: Mr. Speaker and gentlemen, in the report read by the President-Elect to the first meeting of the House of Delegates on Monday, April 23, 1951, the President-Elect gave us a vision of what he would like to see in the future, namely, that the students in our State University Medical School might have an opportunity in their senior year to be placed, for a period of some months, with a doctor in active practice, and that this student might live and eat with the doctor, might work with him, and thus be enabled "intimately to learn how to cooperate with the type of people he eventually will serve."

Our President-Elect, in his message, states: "The State Society, if given the opportunity, can supply the doctors, and these doctors will be individualists of the type who will instill in the student the fundamentals of free enterprise, of honorable practice and of honest living." He further asks, "Will you join me in the promotion of this 'flight of fancy'?"

Your Reference Committee finds itself in full approval of our President-Elect's "flight of fancy," and hopes some way can be found whereby the Iowa State Medical Society and the faculty of the School of Medicine of the State University of Iowa can bring this about.

Report of the Board of Trustees:

The Reference Committee has examined the report, together with the supplementary report of the Board of Trustees. Your Reference Committee recommends that the present activities of the State Medical Society be not curtailed.

Report of the General Manager:

Your Reference Committee, in reviewing the report of the General Manager of the Iowa State Medical Society, and after lengthy conference with the General Manager himself, recommends the following:

1—That there be established a Subcommittee on Health Education under the Committee on Medical Service. This Subcommittee on Health Education is felt to be necessary because of the immense amount of work needed to be done furthering health education in lay groups.

First, this proposed Subcommittee will have liaison with the rural health departments of the various farm groups.

Second, it will have liaison with the Health Educa-

tion under the Extension Service of the Iowa State College at Ames.

Third, it will have liaison with the Iowa Health Council, under the State Department of Health.

Fourth, it will have liaison with the many other lay groups which are constantly seeking advice from the Iowa State Medical Society.

2—The Speakers' Bureau:

Your Reference Committee believes that the continued bringing of postgraduate medical education to the doctors in rural areas is a "must." The centers of larger population, such as Des Moines, Cedar Rapids, Mason City, and so on, are able, through the strength of their own local county societies, to have well-organized postgraduate medical education under their own programs.

However, the doctors located in the more sparsely populated areas of the state are not able to meet the expense of these courses from their own county society funds.

Your Reference Committee finds that the average cost of organizing one of the Speakers' Bureau's postgraduate courses is about \$125, and that the total cost of one of these courses runs from \$204.50 to \$258.90. It would seem that these post graduate courses cannot be held in the more sparsely populated areas unless they are more or less subsidized by the State Medical Society.

Therefore, your Reference Committee recommends frequent meetings of the whole Speakers' Bureau Committee and special study by the Committee as to whether and how much the State Society should subsidize these courses.

Mr. Speaker, I move the adoption of your Reference Committee's report.

The motion was severally seconded, was put to a vote, and was carried unanimously.

The Speaker: The Chair recognizes the Chairman of the Reference Committee on Legislation and Public Relations, Dr. G. Braunlich.

REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Braunlich: Mr. Speaker, the Reference Committee on Legislation and Public Relations met at 10 a. m. The Committee had six reports referred to it.

First was the report of the Medicolegal Committee. Your Reference Committee has carefully considered this report, and recommends its approval.

I move that this portion of the report be accepted.

Dr. Housholder: I second the motion.

The motion was put to a vote and was carried unanimously.

Dr. Braunlich: Second was the report of the Emergency Medical Service Committee. Dr. Ferguson and Dr. Bierring appeared to discuss this report. Your Committee approves this report, and recommends its adoption.

I move the acceptance of this portion of the report.

The motion was severally seconded, was put to a vote, and was carried unanimously.

Dr. Braunlich: Third was the report of the Grievance Committee. As this was purely a factual report of the work of the Committee, there was nothing for your Reference Committee to consider. We recommend the approval of this report.

I move the acceptance of this portion of the report.

The motion was severally seconded, was put to a vote, and was carried unanimously.

Dr. Braunlich: The annual report of the Committee on Medical Education and Hospitals was considered next. Dr. Flocks, of the University, conferred with your Reference Committee in its study of this report. We approve of the intent of the report, and recommend its adoption.

Mr. Speaker, I move the adoption of this portion of the report.

The motion was severally seconded, was put to a vote, and was carried unanimously.

Dr. Braunlich: In connection with this same matter there was a report of the special committee appointed to confer with the Board of Education. The work of this committee overlaps that of the Committee on Medical Education and Hospitals. It was a committee that was set up last year. It specified that the President, the President-Elect, the President of the Board of Trustees, and the Chairman of the Committee on Medical Education and Hospitals constitute its membership. Those men are Dr. Thornton, Dr. Conzett, Dr. Whitaker and Dr. Scanlon. You heard this report read on Monday.

Your Reference Committee approves the report of this special committee, and recommends that the committee be continued with the same personnel, with the addition, however, of the new Chairman of the Committee on Medical Education and Hospitals, to this special committee.

This means that these same four men, as persons and not as officers because of their position in the Society will be continued on the committee, and that in addition thereto the Chairman of the Committee on Medical Education and Hospitals—will be included on the Committee, and that the Committee be continued.

Mr. Speaker, I move the acceptance of this portion of the report.

The motion was severally seconded, was put to a vote, and was carried unanimously.

Dr. Braunlich: Next was the supplementary report of the Committee on Mental Health. This was a report read for Dr. Marker on Monday. Your Committee has carefully considered this report, and we recommend its adoption.

Mr. Speaker, I move the acceptance of this portion of the report.

The motion was severally seconded, was put to a vote, and was carried unanimously.

Dr. Braunlich: The last thing your Reference Committee considered was the report of the Legislative Committee. Your Reference Committee conferred with Dr. Bierring and Dr. Coleman on the Legislative Committee's report. We recommend the adoption of the report as read by Dr. Coleman on Monday. This was the report that had to do with what the legislature has done during this session.

In view of the fact that a county health unit bill was not reported out by the Senate Public Health Committee, Dr. Bierring appeared before the Reference Committee and recommended that the Iowa State Medical Society approve of an enabling act to provide for county or district health units, these to be financed through local funds and without federal aid.

Your Reference Committee recommends that this report be approved and be referred to the Legislative Committee for further study and action. In other words, the Reference Committee felt that this was

something for the Legislative Committee to continue with and see what could be done.

Mr. Speaker, I move that this portion of the report be accepted.

Dr. Kas: I second the motion.

The motion was put to a vote and was carried unanimously.

Dr. Braunlich: Mr. Speaker, I move that the report of your Reference Committee as a whole be accepted.

The motion was severally seconded, was put to a vote and was carried unanimously.

Dr. Braunlich: This report is signed by Drs. Farnsworth, Houlahan, Longworth and myself as Chairman. I want to compliment the members of my Committee for working hard and attending to business and being at the meetings on time, and for their general good work. Thank you.

The Speaker: Thank you very much for a fine report, Dr. Braunlich.

I think the members will agree with me that with the introduction and the actual working of reference committees we are showing that the speeding up of the proceedings of the House is going to be considerably helped in the coming years. Furthermore, I believe that as these reference committees develop, the members of the House will be more interested in attending these reference committee meetings and in seeing how they really work. As I noticed by watching several of these committees working yesterday, I realized they really were "on the ball" and were putting eight hours into their job.

The Chair recognizes the Chairman of the Reference Committee on Constitution and By-laws, Dr. J. E. McFarland.

REFERENCE COMMITTEE ON CONSTITUTION AND BY-LAWS

Dr. McFarland: Mr. Speaker and members of the House, your Reference Committee on Constitution and By-laws met and considered the two proposed changes in the By-laws which had their first reading Monday morning. The Reference Committee unanimously recommends the passage of both amendments. I will read them:

Amend Chapter IX, Section 10 to read as follows: "The Committee on Medical Service shall consist of at least seven members. It shall work with the Council on Medical Service of the American Medical Association, and shall have for its responsibility those matters which are concerned with medical service, specifically medical economics, medical insurance, medical care programs, and such matters as would logically fall within its province."

Further, amend Chapter IX, Section 1 of the By-laws to read as follows: Following the word "necessary" in part 1, Section 1, Chapter IX of the By-laws, insert the following sentence: "Members of the Society who are not members of the House of Delegates may be appointed to serve on any of the above standing committees."

This simply legalizes the status of members of the standing committees of the House of Delegates who themselves are not members of the House of Delegates.

This report is signed by Dr. I. K. Sayre, Dr. J. D. Conner and myself as Chairman.

Mr. Speaker, I move the adoption of the report of

the Reference Committee on Constitution and By-laws.

The Speaker: Before voting on these By-laws we will adopt the report of the Reference Committee by this action. Is there a second to the motion? The motion is to accept the report of the Reference Committee.

The motion was severally seconded, was put to a vote, and was carried unanimously.

The Speaker: Now, in order to legalize the report, I believe a motion would be in order to adopt these changes, since they are changes in the By-laws, by separate votes.

It is unnecessary to re-read the first amendment having to do with the change in the Committee on Medical Service. I will call for a motion to adopt that particular By-law.

Dr. McFarland: I move the adoption of that section of the By-laws.

Dr. J. W. Lawrence: I second the motion.

The Speaker: It is moved and seconded that the amendment to Chapter IX, Section 10, as read, be adopted.

The motion was put to a vote and carried unanimously.

The Speaker: Next is to amend Chapter IX, Section 1 of the By-laws, which is the portion legalizing the standing committees.

Dr. McFarland: I move that that section also be adopted.

Dr. C. O. Adams: I second the motion.

The motion was put to a vote and was carried unanimously.

The Speaker: Thank you, Dr. McFarland and the members of your Committee, for your work. It was not extensive, but it was thorough.

The Chair recognizes the Chairman of the Reference Committee on Resolutions and New Business, Dr. Caughlan.

REFERENCE COMMITTEE ON RESOLUTIONS AND NEW BUSINESS

Dr. Caughlan: Mr. Speaker and members of the House of Delegates, your Reference Committee on Resolutions and New Business met at 10 a. m. Tuesday morning, April 24, for the purpose of considering the resolutions introduced, the presentation by the representatives of the Association of American Physicians and Surgeons and the award to the outstanding general practitioner of the year.

The first resolution concerned unification of the armed forces. This was a motion presented by Dr. Adams, of Cerro Gordo County. After due consideration it was decided that the Chairman of the Committee would communicate with the Chairman of the Council on National Emergency Medical Services as to the desirability of such a resolution at this time.

In explanation of that may I say that those of you who heard Dr. Cline last night heard him speak of the Council on National Emergency Medical Service. I believe this motion was introduced for the purpose of eliminating some of the evils in the use of medical personnel in World War II. As he told you last night, the Council on National Emergency Medical Service, working closely with the Surgeons General of the various departments, has been able to eliminate many of the evils, and I am sure the action of your Reference Committee is in line with the statement of

the President-Elect of the American Medical Association last night.

Mr. Speaker, I move the adoption of this portion of the report.

The motion was severally seconded, was put to a vote, and was carried unanimously.

Dr. Caughlan: The next resolution was introduced by Dr. Maxwell, of Woodbury County, and had to do with a recent very small newspaper article, seen by two doctors in Sioux City, in which a plan was proposed to allow professional people to set aside a certain percentage of their income and invest it in government bonds, these government bonds to be tax-free and to provide a retirement fund for the individual when his active professional life is ended.

There is nothing other than that to substantiate this particular motion. While Dr. Dickinson, of the Bureau Council on Medical Economic Research, has touched upon this matter in some of his publications to the members of the American Medical Association, it was felt that it was not desirable for the House of Delegates to take any action on this until further information is available.

Dr. Honke, a member of the Committee, has agreed to write to Dr. Lawrence, the representative of the American Medical Association in the Washington office, to ascertain the status of this bill.

The recommendation of the Reference Committee is that no action be taken by the House of Delegates until further information is obtained.

Mr. Speaker, I move the adoption of this section of the report.

The motion was severally seconded, was put to a vote, and was carried unanimously.

Dr. Caughlan: The next item was a resolution introduced for the purpose of adopting a retirement plan for lay employees of the State Society. This resolution has for its purpose the adoption of a pension plan for the lay employees.

The Reference Committee recommends that the House of Delegates approve such a pension plan, should the Board of Trustees and the other officers of the Society find it economically feasible.

Mr. Speaker, I move the adoption of this section of the report.

Dr. Lawrence: I second the motion.

The motion was put to a vote and was carried unanimously.

Dr. Caughlan: Now we come to the important matter of the general practitioner award. You will remember that at the first session of the House of Delegates in 1951 there were two nominations made from the floor, one for Dr. F. A. Hennessy of Calmar and one for Dr. G. M. Johnson, of Marshalltown.

Apparently there has been considerable misunderstanding about the method of presentation of candidates for the general practitioner award. We think it is a function of the Committee not only to make the award this morning, but to advise the members of the House of Delegates and the members of the Iowa State Medical Society concerning the proper method of presenting a brochure on the candidate proposed.

The first one I want to hold up for your inspection (and to compliment very highly) is the one prepared by the Dubuque County Medical Society for the late Dr. Francis Joseph Kriebs. Unfortunately Dr. Kriebs died between the preparation of this brochure and this present meeting, and so he is not eligible for the award. The Committee wishes to compliment the

Dubuque County Medical Society for its outstanding brochure, and feels that the Dubuque County Medical Society deserves special commendation for the completeness and beauty of this brochure.

It is regretted that the recent death of Dr. Kriebs has eliminated him from consideration. At this time it is felt that the House of Delegates should pay tribute to the outstanding life of service of this very fine doctor. [Applause]

Two brochures, properly prepared but not nearly so well done as this one for Dr. Kriebs, were received, one for Dr. Roy G. Swinney, of Richland and the other for Dr. Ambrose E. Wanamaker, of Hamburg. Both of these doctors have long and honorable records of service to their community and it was very difficult to make a choice.

The Committee felt that the contributions of Dr. Wanamaker have been set forth in a better manner, and therefore Dr. Wanamaker is chosen for the general practitioner award for 1951.

Mr. Speaker, I move that the selection, as made by the Committee, be approved by the House of Delegates.

The motion was severally seconded, was put to a vote, and was carried unanimously.

[Dr. Caughlan read Dr. Wanamaker's biography, as incorporated in the brochure.]

Dr. Caughlan: The Committee feels that all members of the State Society should keep in mind the presenting of names for the award. I think every doctor should look around and pick some worthy general practitioner whose name he would like to present, who he feels would be a worthwhile recipient of this honor. It is recommended that brochures be prepared, modeled after the one prepared by Dubuque County for Dr. Kriebs, since it means the winner of the Iowa award will be entered in the American Medical Association competition in the other 47 states.

Mr. Speaker, I move the adoption of this portion of the report.

The motion was severally seconded, was put to a vote, and was carried unanimously.

Dr. Caughlan: Mr. Speaker, I move the adoption of the report as a whole.

Dr. Housholder: I second the motion.

The motion was put to a vote and was carried unanimously.

Dr. Caughlan: I wish to thank the members of my Committee, particularly Dr. Kersten and Dr. Trunnell, who were present during the entire session yesterday morning, and who were most earnest in their consideration of the business before our Committee.

This report is signed by Drs. Kersten, Trunnell, Honke, and Caughlan as Chairman. Thank you.

The Speaker: Thank you, Dr. Caughlan. You and your Committee are to be commended on the excellent way in which you have reviewed and presented the cases, and for explaining how we may present the candidates for the general practitioner award in the coming year.

A matter has been brought to my attention which possibly slipped by the Reference Committee on Reports of Officers. The Trustees asked a question about dues in their report.

Under special dues, the Trustees feel that dues should be waived for physicians going into service. They also feel that possibly special consideration should be given to older physicians who are not 100 per cent active, who feel they cannot afford \$50 but

who would like to remain members in good standing. Is it judicial to handle such cases under their individual merits, and would the House of Delegates recommend that the Trustees use their judgment about lessening the amount for such men?

Dr. R. N. Larimer, would you like to amplify those remarks, please?

Dr. Larimer: It seems to me that these remarks do not particularly need amplification as far as men in the service are concerned. With the increase in the State dues and with the increase in the A.M.A. dues, this business of belonging to organized medicine is getting to be almost a luxury. The only good thing about it, we might say, is that it is deductible. The question, then, is whether to waive all or part of the dues of men who are older, whose incomes have been decreased for one reason or another. We would like to have some discussion of that. Our only suggestion is that each case should be taken up on its own merits. We can find out by a little gossiping, and from reports, and so on, whether a given individual has a good business, whether his health is poor, and so on.

I don't want to waste your time discussing these things, but this is one of the problems confronting us.

The Speaker: Thank you, Dr. Larimer. Are there any suggestions from the House as to how to handle this, or would someone like to make a motion to leave it to the Board of Trustees?

Dr. C. T. Maxwell: I move that this matter be left to the judgment of the Board of Trustees, and that their action, whatever it may be, be approved by this Society.

The motion was severally seconded, was put to a vote, and was carried unanimously.

The Speaker: Mr. Secretary, is there any old business?

Secretary Phillips: None that I know of.

The Speaker: The Chair recognizes Dr. Ward for a matter of new business.

Dr. D. F. Ward: Mr. Speaker and members of the House of Delegates, the 1951 Nominating Committee would like to make this supplementary report: It is recommended by the 1951 Nominating Committee that Chapter V, Section 2 of the By-laws be changed to read as follows:

"On the first day of the annual session there shall be elected a Committee on Nominations, consisting of eleven delegates, one from each councilor district. Such Committee shall be selected by the delegates of each councilor district in separate caucuses.

"It shall be the duty of this Committee to consult with the members of the Society and to hold one or more meetings, at which the interests of the Society and the profession of the State for the ensuing year shall be carefully considered.

"The Committee shall report the results of its nominations to the House of Delegates. It shall submit the names of one or more members of the Society for each office to be filled at the annual election. No two candidates for President-elect shall be named from the same county."

This is signed by Drs. H. E. Farnsworth, G. H. Powers, C. O. Adams, J. H. Sunderbruch, T. D. Kas, O. D. Wolfe, C. C. Hall, L. E. Hooper and J. G. Fellows.

I move the acceptance of this recommendation, and its referral to the Committee on Constitution and By-laws.

Dr. Housholder: I second the motion.

The Speaker: The matter will be brought up for

approval or adoption, if you wish, at the first session of the next annual meeting, in 1952. The action that you take in approving this today, therefore, would be merely the action of referring it to the Legislative Committee, and its further adoption would be withheld by law until that time.

The motion was put to a vote and was carried unanimously.

The Speaker: This will be referred to the Committee on Constitution and By-laws for presentation and second reading and possible adoption at the next annual meeting.

Dr. C. A. Henry: Mr. Speaker, knowing the uncertainties of the weather in April in Iowa, and the advantageous prospects for more clement weather in the month of May, I wish to offer this resolution:

"Resolved: That the annual sessions of the Iowa State Medical Society shall be held at such time in May as has been arranged by the Committee on Arrangements, and at such place as has been fixed at the previous annual session by the House of Delegates."

I move the adoption of this resolution.

The Speaker: If adopted, this resolution will be passed to the proper committee.

The motion was severally seconded, was put to a vote, and was carried unanimously.

The Speaker: The next order of new business is the selection of a place for the meeting in 1953. As you know, the 1952 session will be held in Des Moines. The selection of a meeting place for the annual session in 1953 is now the order of business.

Dr. Boice: Mr. Speaker, I would like to move that the 1953 meeting be held in Des Moines.

The motion was severally seconded.

The Speaker: Are there other suggestions? Are you ready for the question?

The motion was put to a vote and was carried unanimously.

The Speaker: The 1953 session will be held in Des Moines.

At this time I would like to read three telegrams which have been received. (These were read.)

"BEST WISHES FOR FINE CONVENTION AT SIOUX CITY BUT JUST REMEMBER WE HAVE MISSED YOU MIGHTILY PAST TWO YEARS AND WELCOME YOU BACK DES MOINES IN 1952 REGARDS. ARTHUR H. BRAYTON, DES MOINES CONVENTION BUREAU."

"PLEASE BE ASSURED OF OUR REAL DESIRE HAVE YOUR FINE CONVENTION IN DES MOINES NEXT YEAR. WE APPRECIATE YOUR HONORED PROFESSION AND LOOK FORWARD TO BEING HOSTS IN 1952. A. B. CHAMBERS, MAYOR OF DES MOINES."

"BEST WISHES SUCCESSFUL CONVENTION SIOUX CITY AND CORDIAL INVITATION RETURN DES MOINES NEXT YEAR. WE HAVE REALLY MISSED YOUR FINE GROUP IN 1950 AND 1951 AND WELCOME YOUR RETURN IN 1952. ARTHUR H. BRAYTON, DES MOINES CONVENTION BUREAU."

Dr. F. Sternagel: Mr. Speaker, I would like to offer a motion to give a vote of thanks to the Woodbury County Medical Society and the Auxiliary for the fine time and hospitality shown us.

The Speaker: The motion is to offer our thanks to the Woodbury County Medical Society and the Auxiliary for their efforts on our behalf. I think the approval of that motion should be in the form of a rising vote of thanks.

[The audience arose and applauded.]

The Speaker: Is there other new business?

Dr. D. L. Bray: I have a question. It may not seem important on the face of it, but in actively opposing

county health units I have been wondering how the county commissioners arrive at a decision in their county on health problems.

My question is this: What has happened in this state that each county does not have a health officer who can be pointed to in rebuttal when they propose these county health unit plans?

The Speaker: Who can answer the question?

Dr. Luse: We have had this question come up twice. The Council approves it. The supervisors disapprove it on account of the expense.

Dr. Bray: Dr. Luse is talking in terms of a county health unit.

Dr. Luse: That is what I mean. It is a county organization, and the engineer.

Dr. Bray: Am I wrong, or are we taking a stand against the county health unit as such, or are we not?

Dr. Braunlich: Our Committee discussed the question of county health units. We did not disapprove of county health units. This Society has never disapproved of them.

Dr. Bray: I think that is very interesting, because your back door is open if you form one. I have seen this in operation, and that is why I am trying to find out what I might use as rebuttal in my own county. We voted it down in our county medical society when it was proposed there.

Dr. Hall: We made a study of this, and came to the conclusion that it is an open door to socialized medicine. When you have three physicians and an osteopath, a veterinarian and a dentist, and appoint six lay people, and put it under the control of the board of education or the board of supervisors, the control of the medical profession is down any time they want to down it.

The worst feature is that if one county does not conduct it successfully, then two, three or four units can be thrown together. Our study shows there is not a single thing that can't be taken care of by the Iowa State Board of Health or the local boards of health.

The Speaker: I will ask the Secretary to read the names of the men suggested by the Nominating Committee for submission to the Governor, for his consideration in choosing a doctor for the State Board of Medical Examiners.

Secretary Phillips: Mr. Speaker and members of the House, the state law requires that six names be recommended to the Governor. The Nominating Committee has nominated Drs. M. A. Royal; D. H. Kast; R. F. Birge; J. E. Houlahan; H. C. Scharnweber and E. R. Gottsch.

The Speaker: The By-laws require approval of the committees selected. I will read them off and thereafter ask your approval:

Constitution and By-laws:

G. C. Albright, Iowa City, Chairman
H. C. Scharnweber, Boone
J. B. Priestley, Des Moines

Legislative:

F. C. Coleman, Des Moines, Chairman
J. W. Billingsley, Newton
J. D. Conner, Nevada

Medical Education and Hospitals:

F. H. Entz, Waterloo, Chairman
L. F. Hill, Des Moines
J. H. Randall, Iowa City

Medicolegal:

E. F. Van Epps, Iowa City

Medical Service:

Fred Sternagel, West Des Moines, Chairman
M. I. Olsen, Des Moines
O. N. Glesne, Fort Dodge
C. H. Stark, Cedar Rapids
F. D. McCarthy, Sioux City
J. G. Fellows, Ames
R. C. Gutch, Chariton
J. E. Reeder, Sioux City

Grievance:

First District—L. C. Kuhn, Decorah
Second District—L. W. Swanson, Mason City
Fourth District—J. W. Bushnell, Sioux City
Sixth District—S. D. Porter, Grinnell
Seventh District—R. L. Knipfer, Jesup
Eighth District—H. B. Weinberg, Davenport
Tenth District—L. E. Hooper, Indianola
Eleventh District—C. H. Flynn, Clarinda

SPECIAL COMMITTEES OF THE HOUSE OF DELEGATES

Baldridge-Beye Memorial:

J. W. Agnew, Davenport, Chairman

Cancer:

A. W. Erskine, Cedar Rapids, Chairman
D. F. Ward, Dubuque
E. G. Zimmerer, Des Moines
H. W. Morgan, Mason City
V. W. Petersen, Clinton
W. J. Balzer, Davenport
S. F. Singer, Ottumwa
J. B. Thielen, Fonda
K. R. Cross, Des Moines
J. D. Hennessy, Council Bluffs

Fracture:

D. C. Wirtz, Des Moines, Chairman
L. R. Martin, Council Bluffs
W. M. Krigsten, Sioux City
C. B. Larson, Iowa City
R. M. Wray, Cedar Rapids

General Practice:

C. V. Hamilton, Garner, Chairman
J. S. Jackson, Mount Pleasant
T. D. Kas, Sutherland
C. A. Nicoll, Panora
Ruth F. Wolcott, Spirit Lake

Heart:

H. W. Rathe, Waverly, Chairman
F. H. Coulson, Burlington
K. K. Hazlet, Dubuque
E. B. Floersch, Council Bluffs
J. C. Shrader, Fort Dodge

Historical:

W. L. Bierring, Des Moines, Chairman
Jeannette Dean-Throckmorton, Des Moines
C. A. Henry, Farson
J. T. McClintock, Iowa City
C. L. Jones, Gilmore City
C. A. Boice, Washington
D. L. Long, Mason City

Industrial Health:

H. H. Smead, Des Moines, Chairman
Van Robinson, Des Moines

R. F. Frech, Newton
 L. J. Miltner, Davenport
 C. J. Lohmann, Burlington
 E. L. Rohlf, Jr., Waterloo
 H. A. Spilman, Ottumwa

Maternal and Child Health:

C. P. Phillips, Muscatine, Chairman
 R. M. Collins, Council Bluffs
 H. A. Weis, Davenport
 H. E. Farnsworth, Storm Lake
 R. H. McBride, Sioux City
 L. F. Hill, Des Moines
 C. A. Hanson, Waterloo
 Maryelda Rockwell, Clinton

Mental Health:

J. I. Marker, Davenport, Chairman
 H. C. Merillat, Des Moines
 L. B. Sedlacek, Cedar Rapids

National Emergency Medical Service:

J. W. Ferguson, Newton, Chairman
 F. M. Burgeson, Des Moines
 E. M. Honke, Sioux City
 R. P. Rusk, Dubuque
 R. C. Hardin, Iowa City

Scientific Exhibits:

J. T. McMillan, Des Moines, Chairman
 E. A. Fullgrabe, Sioux City
 R. H. Flocks, Iowa City

Speakers' Bureau:

R. C. Stickler, Des Moines, Chairman
 Charlotte Fisk, Des Moines
 G. F. Keohen, Dubuque
 C. F. Watts, Cedar Rapids
 A. D. Woods, State Center
 R. M. Wolfe, Marshalltown
 C. A. Brown, Sioux City
 Harold Margulies, Des Moines

Tuberculosis:

R. J. Harrington, Sioux City, Chairman
 J. C. Parsons, Des Moines
 J. C. Painter, Dubuque
 L. J. Galinsky, Des Moines
 R. E. Smiley, Mason City
 William Spear, Oakdale

Section Chairmen:

Medicine—J. Stuart McQuiston, Cedar Rapids
 Surgery—Donovan F. Ward, Dubuque
 EENT—Ralph C. Carpenter, Marshalltown
 Orthopedics—Carroll O. Adams, Mason City
 Obstetrics and Gynecology—John H. Randall, Iowa City

Pediatrics—George J. Klok, Council Bluffs

I would ask the approval of these Committees by the House.

Dr. Luse: I so move.

Dr. Farnsworth: I second the motion.

The motion was put to a vote and was carried unanimously.

The Speaker: Gentlemen, is there any further business?

Dr. Luse: Mr. Chairman, would it be asking too much if we could receive a mimeographed copy of these meetings soon, so that we can bring it before the county societies? By the time it is published in the *Journal* we will have forgotten a lot.

The Speaker: How soon will the *Journal* be out, Miss McCord?

Miss McCord: The *Journal* will be out in July, but I will be glad to try to send copies of the summary.

Dr. O. Alden: I wonder if it would be out of order or unnecessary to ask the Secretary to write a letter to Dr. John Cline concerning our appreciation both of his views and his coming to our meeting and giving us that fine address. I so move.

The Speaker: I think that is an excellent suggestion.

Dr. Adams: I second it.

The motion was put to a vote and was carried unanimously.

Dr. McFarland: I move we adjourn.

Dr. Adams: I second the motion.

The motion was put to a vote and was carried unanimously, and the meeting adjourned sine die at 9:35 a.m.

EDITORIALS

(Continued from page 269)

and readers so that the stand of the State Society may be fully known. In all fairness to the AAPS, let it be said we do not know the basis upon which they made their statement. They may have been misinformed but by now have been appraised of the true resolution passed by the House of Delegates of our Society in April, 1947.

At the annual meeting in 1947, a representative of the AAPS appeared before our House of Delegates to present the story of the AAPS and ask endorsement. A special committee was appointed to study the constitution and by-laws of the organization and to ask questions of this representative. After careful consideration, the committee brought in the following report:

"Your committee approves in principle the efforts of organized medicine to prepare for active and passive resistance to any nationalized health program that would subordinate the medical profession to social groups or government agencies.

"Your committee further believes that the efforts of the Association of American Physicians and Surgeons to achieve these ends are commendable.

"We are unanimous in our objection to the mandatory provisions of subsections (a) and (b), section 2, of the by-laws of the Association which provide that, when 75 per cent of eligible physicians in a county become members, they cannot carry on professional relations with non-members in the county. We feel that any such provision should be subject, in each instance, to the determination of the county medical society or the local branch of the Association of American Physicians and Surgeons."

This committee report was approved by the House of Delegates on April 18, 1947 and no change in the Society's attitude has been made since. The State Society has asked the Association of American Physicians and Surgeons to publish a correction about this mis-statement, but in order that the record may be straight, this explanation is being published so that it will be in permanent form and easily accessible for reference.

FIFTY YEAR CLUB MEMBERS

June 15, 1951

ADAMS, ERNEST M.....	Central City	MCBURNEY, GEORGE F.....	Belmond
ALDRICH, J. FRANK.....	Clarinda	MCLAUGHLIN, CHARLES W.....	Washington
BARBER, OLIVER S.....	Creston	MARBLE, PEARL L.....	Liscomb
BARTON, EDWIN G.....	Ottumwa	MASON, STELLA M.....	Mason City
BATES, WILLIAM R.....	Fort Dodge	MEYERS, FRANK W.....	Ottumwa
BEATTY, EDWARD D.....	Mallard	MILLS, FRANK W.....	Dubuque
BELL, EDWARD P.....	Pleasantville	MINASSIAN, HAROOTUNE A.....	Des Moines
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BIERRING, WALTER L.....	Des Moines	MORRISON, WESLEY J.....	Cedar Rapids
BIGELOW, CHARLES T.....	Clinton	MORSE, CHARLES H.....	Eagle Grove
BIRNEY, CLEANTHUS E.....	Estherville	MOTT, WILLIAM H.....	Farmington
BOICE, CLYDE A.....	Washington	MYERS, FRANK L.....	Sheldon
BOYER, HOWARD C.....	Council Bluffs	NELSON, HARRY E.....	Dayton
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CARSON, ANDROS.....	Des Moines	NORTON, ALVA C.....	Rockwell City
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CHITTUM, JOSIAH M.....	North Liberty	PAGELSEN, OTTO H.....	Iowa Falls
COLE, ELMER J.....	Woodbine	PATTERSON, JOHN N.....	Burlington
DEAN, WILLIAM F.....	Osceola	PECK, RAYMOND E.....	Davenport
DENNISON, JOHN C.....	Bellevue	PHELPS, MYRON H.....	Van Wert
DULIN, TARANA J.....	Iowa City	PHILLIPS, I. HILDREDTH.....	Missouri Valley
ELY, FRANCIS A.....	Des Moines	PRESNELL, J. WILLIAM.....	Scranton
FARNUM, EARL P.....	Sibley	QUIRE, FRANK E.....	Lynnville
FIELD, GEORGE A.....	Des Moines	RAMBO, DAVID T.....	Ottumwa
FOLEY, FRED C.....	Newell	RAW, ELMER J.....	Pierson
FOWLER, CHARLES C.....	Lovilia	ROBINSON, ROBERT E.....	Waverly
FRANKLIN, GEORGE W.....	Jefferson	ROGERS, CLAUDE B.....	Earlville
GARDNER, JOHN R.....	Lisbon	RUML, WENTZLE.....	Cedar Rapids
GARDNER, PAUL E.....	New Hampton	SAMS, JOSEPH H.....	Clarion
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GILFILLAN, HOMER J., SR.....	Bloomfield	SAWYER, PRINCE E.....	Sioux City
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GIVENS, HEZEKIAH F.....	West Bend	SCHENK, ERWIN.....	Des Moines
GRAY, HENRY A.....	Keokuk	SCOTT, SOPHIE H.....	Des Moines
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GRIFFIN, JOHN M.....	Des Moines	SHELTON, CHARLES D.....	Bloomfield
GUTCH, THOMAS E.....	Albia	SIGWORTH, FREDERICK B.....	Anamosa
HARRINGTON, BURTON.....	Cedar Rapids	SINNING, AUGUSTUS.....	Iowa City
HEADY, CONDA C. C.....	Bloomfield	SMITH, FRANKLIN C.....	Mount Ayr
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HEATHMAN, FRANK E.....	Pocahontas	STEVENS, HARRY L.....	Floris
HEETLAND, LOUIS H.....	Sibley	STINSON, ALICE C.....	Estherville
HENRY, CLYDE A.....	Farson	STUART, PERCY E.....	Nashua
HIGHT, WILLIAM B.....	Des Moines	SUGG, HERBERT R.....	Clinton
HILLS, HENRY M.....	Lamoni	THROCKMORTON, J. FRED.....	Des Moines
HULL, HENRY C.....	Washington	TINLEY, MARY L.....	Council Bluffs
HUSTON, HERBERT M.....	Ruthven	VAN EPPS, CLARENCE E.....	Iowa City
JASTRAM, ALFRED H.....	Remsen	WALKER, HARRY L.....	Cedar Rapids
JOHNSON, ALBERT P.....	Sigourney	WALSH, THOMAS N.....	Hawkeye
JOHNSON, GEORGE M.....	Marshalltown	WALSTON, EDWIN B.....	Des Moines
JONES, LOUIS H.....	Wall Lake	WANAMAKER, AMBROSE E.....	Hamburg
KAUFFMAN, WILLIAM A.....	Marshalltown	WEIR, EDWARD C.....	Council Bluffs
KERLIN, JARED D.....	Des Moines	WELLS, FRED L.....	Des Moines
KERN, LESTER C.....	Waverly	WESTENBERGER, JOSEPH C.....	St. Ansgar
KING, DAVID H.....	Batavia	WHITEHILL, NELSON M.....	Boone
KING, ELLIOTT R.....	Letts	WHITLEY, RALPH L.....	Osage
KISOR, FRANK H.....	Mechanicsville	WHITMIRE, WILLIAM L.....	Sumner
LA FORCE, EDWARD F.....	Burlington	WILSON, FRED C.....	Colesburg
LAUGEL, AMBROSE M.....	Breda	WOLFE, THOMAS L.....	Mount Vernon
LEASE, NIMROD J.....	Crawfordsville	WOODBIDGE, JAMES W.....	Emmetsburg
LEE, GISLE M.....	Thompson	WRIGHT, WALTER N.....	Rose Hill
LOOSE, DAVID N.....	Maquoketa	WYLAND, ASA O.....	Underwood
LUEHRSMANN, BERNARD H.....	Dyersville	YOUNG, HENRY C.....	Bloomfield

IOWA STATE MEDICAL SOCIETY

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President.....Donald C. Conzett, Dubuque
 President-Elect.....Ben T. Whitaker, Boone
 First Vice President.....Martin I. Olsen, Des Moines
 Second Vice President.....Charles L. Jones, Gilmore City
 Secretary.....Allan B. Phillips, Des Moines
 Treasurer.....N. Boyd Anderson, Des Moines

COUNCILORS

First District—Cluley C. Hall, Maynard.....1952
 Second District—Charles H. Cretzmeyer, Algona.....1953
 Third District—Matthew T. Morton, Estherville.....1954
 Fourth District—Wendell L. Downing, Le Mars
 Chairman1953
 Fifth District—Ernest M. Kersten, Fort Dodge.....1954
 Sixth District—Otis D. Wolfe, Marshalltown.....1952
 Seventh District—Harold A. Housholder, Winthrop.....1953
 Eighth District—Clyde A. Boice, Washington.....1954
 Ninth District—Elias B. Howell, Ottumwa.....1953
 Tenth District—Ivan K. Sayre, St. Charles, Secretary..1954
 Eleventh District—Oscar Alden, Red Oak.....1952

TRUSTEES

Robert N. Larimer, Sioux City, Chairman.....1952
 Lonnie A. Coffin, Farmington.....1953
 John W. Billingsley, Newton.....1954

DELEGATES TO A. M. A.

George Braunlich, Davenport.....January 1, 1953
 Julian E. McFarland, Ames.....January 1, 1953
 Gerald Caughlan, Council Bluffs.....January 1, 1954

ALTERNATE DELEGATES TO A. M. A.

Frank G. Ober, Burlington.....January 1, 1953
 Ernest M. Kersten, Fort Dodge.....January 1, 1953
 Donovan F. Ward, Dubuque.....January 1, 1954

EXECUTIVE COUNCIL

Donald C. Conzett, Chairman.....Dubuque
 Ben T. Whitaker.....Boone
 Allan B. Phillips.....Des Moines
 N. Boyd Anderson.....Des Moines
 Robert N. Larimer.....Sioux City
 Lonnie A. Coffin.....Farmington
 John W. Billingsley.....Newton
 Cluley C. Hall.....Maynard
 Charles H. Cretzmeyer.....Algona
 Matthew T. Morton.....Estherville
 Wendell L. Downing.....Le Mars
 Ernest M. Kersten.....Fort Dodge
 Otis D. Wolfe.....Marshalltown
 Harold A. Housholder.....Winthrop
 Clyde A. Boice.....Washington
 Elias B. Howell.....Ottumwa
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 Broman, John A., Maquoketa
 Brown, Addison W., Des Moines
 Brown, Arthur C., Council Bluffs
 Brown, Bernice L. E., Iowa City
 Brown, Carroll A., Sioux City
 Brown, Douglas H., Forest City
 Brown, Gates M., Dayton (L.M.)
 Brown, Gerald F., Iowa City
 Brown, Harold L., Sioux City
 Brown, Ivan E., Hartley
 Brown, Kenneth R., Leon
 Brown, Merle J., Davenport
 Brown, Robert C., Mason City
 Brown, Wayne B., Mount Pleasant
 Brown, William J., Jr., Davenport
 Brownstone, Manuel, Clear Lake
 Brownstone, Sidney, Clear Lake
 Brubaker, Carl F., Corydon
 Bruce, James H., Fort Dodge
 Bruechert, Henry N., Parkersburg
 Brumer, Herbert B., Clinton
 Brummitt, Charles F., Centerville
 Brundige, Ralph E., Akron
 Bruner, Julian M., Des Moines
 Brunk, Amos W., Prescott
 Brunner, Walter J., Akron
 Brush, C. Herbert, Shenandoah
 Brush, Frederick C., Mason City
 Buchanan, John J., Milford
 Buckmaster, Raleigh A., Dunkerton
 Buckwalter, Joseph A., Iowa City
 Bullock, Alfred L., Cushing
 Bullock, Grant D., Inwood
 Bullock, William E., Lake Park (L.M.)
 Bunch, Harold M., Shenandoah
 Bunge, Raymond G. E., Iowa City
 Burbank, Dean S., Pleasantville
 Burch, Earl S., Dayton
 Burcham, Thomas A., Des Moines
 Buresh, Abner, Lime Springs
 Burgeson, Floyd M., Des Moines
 Burgess, Arthur W., Iowa Falls
 Burke, Edmund T., Des Moines
 Burke, Thomas A., Mason City
 Burleson, Marvin W., Fort Dodge
 Burns, Harry, Des Moines
 Burnside, Raymond A., Des Moines
 Burr, Charles L., Des Moines
 Burroughs, Hubert H., Sioux City
 Bursheim, Peder J., Des Moines
 Bush, Earl B., Ames
 Bushmer, Alexander, Orange City
 Bushnell John W., Sioux City
 Butler, Margaret K., Fort Dodge
 Butterfield, Edwin J., Tucson, Ariz. (L.M.)

- Buxton, Otho C., Jr., Webster City
Byers, Albert G., Coggon
Byrnes, Clemmet W., Dunlap
- Cahn, Philipp, Oakdale
Calbreath, Lloyd B., Humeston
Callaghan, Ambrose J., Jr., Sioux City
Callahan, George D., Iowa City
★Camp, John R., Thompson
Campbell, Nathan, Yarmouth
Campbell, Thomas R., Sioux Rapids
Campbell, Walter V., Oskaloosa
Cantwell, John D., Davenport (L.M.)
Carey, Edward T., Jr., Clinton
Carey, Michael J., Council Bluffs
Carlile, Amos W., Manning
Carlson, Elmer H., Muscatine
Carlson, Frank G., Mason City (L.M.)
Carney, Robert G., Iowa City
Carney, Roscoe P., Jr., Davenport
Carpenter, Fred E., Newton
Carpenter, Ralph C., Marshalltown
Carr, Leslie L., West Union
Carr, Thomas L., Iowa City
Carrigg, Lawrence G., Cedar Rapids
★Carroll, Thomas J., Sibley
Carryer, Carl H., Des Moines (L.M.)
Carson, Andros, Des Moines (L.M.)
★Carson, Raymond W., Winterset
Carstensen, Albert B., Linn Grove
Carstensen, Vincent H., Waverly
Carter, John R., Iowa City
Carver, David C., Rockwell City
Carver, William F., Fort Dodge (L.M.)
Cary, Walter, Dubuque
Cash, Paul T., Des Moines
Cash, William H., Lenox
Cashman, C. F., Hartley
Castell, John W., Fairfield
Castles, William A., Dallas Center
Catalona, William E., Muscatine
Catlin, Karl A., Clarinda
Catterson, Leroy F., Oskaloosa
Caughlan, Gerald V., Council Bluffs
Cauley, Francis P., Anthon
Caulfield, John D., New Hampton
Chadbourne, Theodore L., Vinton (L.M.)
Chain, Leo W., Dedham
Challed, Don S., Cedar Rapids
Chambers, Charles L., Des Moines (L.M.)
Chambers, James W., Des Moines
Chapler, Keith M., Dexter
Chapman, Frederick J., Keokuk
Chapman, Robert M., Cedar Rapids
Chase, Sumner B., Fort Dodge
Chase, Walter E., Rippey
Chase, William B., Des Moines
Chase, William B., Jr., Des Moines
Chenoweth, Charles E., Mason City
Chesnut, Paul F., Winterset
Chester, Walter S., Albia
Childs, Hal A., Creston (L.M.)
Chittum, Josiah M., North Liberty (L.M.)
Chittum, John H., Wapello (L.M.)
Christensen, Eunice M., Spencer
Christensen, Everett D., Spencer
Christensen, John R., Eagle Grove
Christensen, John R., II, Iowa City
Christiansen, Charles C., Grand Mound
Christiansen, James, Sioux City
Christiansen, John E., Durant
Christopherson, Joseph E., Mason City
Clapsaddle, Dean W., Clear Lake
Clapsaddle, John G., Burt
Clark, Clayton W., Nashua
Clark, Edward C., Iowa City
Clark, Frank H., Clarinda
Clark, George H., Oskaloosa
Clark, James P., Estherville
Clark, Orson W., Ogden
Clark, Richardson E., Manchester
Clark, Thomas D., Victor
Clary, William H., Prescott (L.M.)
Clasen, Henry W., Cedar Falls (L.M.)
Clifton, James A., Iowa City
Cline, Hubert L., Iowa City
Closson, Charles L., Walker
Cmeyla, Patrick M., Sioux City
Cobb, Elliott A., Cedar Rapids
Cobb, Elliott C., Sioux City
Coburn, Frank E., Iowa City
Cochran, J. Lawrence, Carroll
Cochrane, Allen M., Adel
Coddington, James H., Humboldt
Cody, William E., Soux City
Coffee, Archie T., Jr., Iowa City
Coffin, Lonnie A., Farmington
Cogley, John P., Council Bluffs
Cohen, Sidney A., Council Bluffs
Colbert, Lawrence D., Royal
Cole, Elmer J., Woodbine (L.M.)
Cole, Fern N., Iowa Falls
Cole, Harold P., Thurman
Cole, Julia, Ames
Coleman, Francis C., Des Moines
Collins, Harry A., Des Moines
Collins, Loren E., Estherville
Collins, Robert M., Council Bluffs
Collison, Robert M., Oskaloosa
Conkling, Russell W., Des Moines
Conley, Rollin M., Perry
Conlon, James B., Council Bluffs
Connery, Roy M., Sergeant Bluffs
Connell, John, Des Moines
Connelly, Edgar J., Dubuque
Conner, John D., Nevada
Conzett, Donald C., Dubuque
Cook, Kenneth G., Fairfield
Cook, R. Sanford, Tipton
Cook, Stuart H., Rock Rapids
Cooper, Clark N., Waterloo
Cooper, Gladys A., Red Oak
Cooper, James S., Burlington
Cooper, Jay C., Villisca
Cooper, Raymond E., Keokuk
Cooper, Wayne K., Cedar Rapids
Corbin, Sylvannus W., Corydon
Corcoran, Thomas E., Des Moines
Cords, Charles H., Rudd
Coriden, Thomas L., Sioux City
Corn, Henry H., Des Moines
Cornell, Corwin S., Knoxville
Cornish, James A., Storm Lake
Coughlan, Charles H., Fort Dodge
Coughlan, Daniel W., Des Moines
Coulson, Forest H., Burlington
★Coyne, Kenneth M., Burlington
Crabb, Dayle N., Denison
Crabb, George M., Mason City
Crain, Lewis F., Deep River (L.M.)
Crain, Mattie M., Deep River (L.M.)
Crawford, Jennings, Cedar Rapids
Crawford, Robert H., Burlington
Crawford, William M., Burlington
Creamer, Frank H., Boone (L.M.)
Cressler, Frank E., Churdan
Cretzmeyer, Charles H., Algona
Cretzmeyer, Charles H., Jr., Philadelphia, Pa.
Cretzmeyer, Francis X., Emmetsburg
Crew, Arthur E., Marion
Crew, Philip I., Cedar Rapids
Cronk, Charles H., Bloomfield (L.M.)
Cross, Donald L., Boone
Cross, Kenneth R., Des Moines
Crossley, J. Wesley, Ringsted
Crow, George B., Burlington
Crowley, Daniel F., Des Moines
Crowley, Daniel F., Jr., Des Moines
Croxdale, Edward L., Villisca
Crumpton, Robert C., Webster City
Cruzen, John L., Barnes City (L.M.)
Culbertson, James W., Iowa City
Cullen, Stuart C., Iowa City
Cullison, Robert M., Winston Salem, N. C.
Cunningham, Glenn D., Davenport
Cunningham, Melvin B., Norwalk
Curtis, Dean, Chariton
Cusick, George W., Davenport
- Dahl, Harry W., Des Moines
Dahlbo, John E., Sutherland
Dahlquist, Ralph M., Decorah
★Dalager, Robert D., Ottumwa
Dalbey, Glenn M., Traer
Dana, Ethel S., Ottumwa
Danielson, May, Clinton
Danley, Royal C., Hamburg
Darling, John P., Mason City
Darrow, Clarence A., Iowa City
Daut, Richard V., Davenport
Daut, Walter W., Muscatine
Davey, William P., Sioux City
Davidson, Thorald E., Mason City
★Davis, Stanley K., Seattle, Wash.
Dawson, Emerson B., Fort Dodge
Dawson, Leon E., Des Moines
Day, Charles S., Cedar Rapids
Day, Philip M., Oskaloosa
Day, Richard T., Hampton
Dean, Abbott M., Council Bluffs
Dean, Frank W., Council Bluffs (L.M.)
Dean, Ray H., Washington (L.M.)
Dean, William F., Osceola (L.M.)
Deaton, Helen J., Iowa City
DeCicco, Ralph, Greenfield
Decker, Charles E., Davenport
Decker, Henry G., Des Moines
Decker, Jay C., Sioux City
Deering, John S., Onawa
DeGowin, Elmer L., Iowa City
Demaree, Chester, Lacona (L.M.)
De Meulenaere, John C., Grinnell
Dempewolf, Robert D., Bellevue
Dennison, John C., Bellevue (L.M.)
Deranleau, Robert F., Perry
DeShaw, Earl H., Monticello
Des Marias, Varina, Grundy Center
Devine, James S., Whittemore
Deweese, Frank L., Keokuk
Dewey, Jay R., Schaller
Dewitt, Charles H., Jr., Macedonia
DeYoung, Ward A., Glenwood
Diamond, Bernard, Waterloo
Diddy, Keith W., Perry
Dierker, Bernard J., Fort Madison
Dierker, Frank H., Fort Madison
Dierker, LeRoy J., Fort Madison
Dimsdale, Louis J., Sioux City
Dingman, Marshall E., Urbana
Ditto, Boyd L., Burlington
Doane, Grace O., Des Moines
Dobson, Richard A., Sioux City
Dodge, Lynn, Ames
Doering, Valentine T., Fort Madison
Dolan, Henry F., Anamosa
Dolan, Thomas R., Anamosa
Doles, James W., Knoxville
Dolmage, George F., Buffalo Center
Dolmage, George H., Mason City
★Donahoe, Joseph F., Fort Dodge
Donahue, Francis D., Sac City
Donahue, James C., Centerville
Donlan, Eugene V., Clinton
Donohoe, Anthony P., Davenport
Donohue, Edmund S., Sioux City
Donovan, William H., Iowa City
Dorner, Ralph A., Des Moines
Dorsey, Thomas J., Fort Dodge
Doss, W. Gordon, Mount Ayr
Doss, W. Norman, Leon
Douvas, Nicholas G., Iowa City
Down, Howard I., Sioux City
Downing, Arthur H., Des Moines
Downing, James A., Des Moines
Downing, John S., Cedar Rapids
Downing, Leroy M., Cedar Rapids
Downing, Wendell L., LeMars
Downs, Vernon S., Ottumwa
Dressler, John B., Ida Grove
Drew, Edward J., Des Moines
Drier, William C., Waterloo
Driver, Richard W., Waterloo
Drown, Roger E., Fort Dodge
Dukerschein, Franklin N., Mason City
Dulin, Evelyn H., Iowa City
Dulin, John W., Iowa City
Dulin, Tarana J. G., Iowa City (L.M.)
Duling, Raymond J., Sioux City
Dulmes, Abraham H., Klemme
Dunkel, George K., Fairfield
Dunlap, Wallace A., Des Moines (L.M.)
Dunn, Francis C., Cedar Rapids
Dunn, James, Davenport
Dusdieker, Stanley W., Des Moines
Dutton, Dean A., Van Horne
Dvorak, Joseph E., Sioux City
Dwyer, Bernard B., Clinton
Dwyer, Robert E., Clinton
Dyke, Lester M., Sheldon
Dyson, James E., Des Moines
- Eastburn, Harvey B., Burlington
Eaton, Robert C., Clarion
Ebersole, Francis F., Mount Vernon
Echternacht, Arthur P., Fort Dodge
Eckberg, Richard A., Hubbard
Eckhardt, Richard D., Iowa City
Edington, Frank D., Spencer
Edwards, Charles V., Council Bluffs
Edwards, Ralph R., Centerville
Egan, Thomas J., Bancroft
Egbert, Dan S., Fort Dodge
Egermayer, George W., Elliott
Eggleston, Alfred A., Burlington
Egloff, William C., Mason City
Ehrenhaft, Johann L., Iowa City
Eiel, John O., Osage
Eiel, Merrill O., Osage
Elam, James O., Iowa City
Elkins, Higdon B., Iowa City
Eller, Lancelot W., Kanawha
Eller, William C., Waterloo
Elliott, Olin A., Des Moines
Ellis, Howard G., Des Moines
Ellison, George M., Clinton
Ellyson, Charles W., Waterloo
Ellyson, Craig D., Waterloo
Ely, Francis A., Des Moines (L.M.)
Ely, Lawrence O., Iowa City
Emanuel, Dennis G., Ottumwa
Emerson, Edward L., Muscatine
Emmons, Marcus B., Clinton
Emmons, Margaret S., Iowa City
Emmons, Richard O., Iowa City
Engelmann, Andrew T., Sioux City
Enna, Melchior D., Dumont
Ennis, Harry H., Manchester
Ensley, Bruce, Shell Rock (L.M.)
Entringer, Albert J., Dubuque
Entz, F. Harold, Waterloo
Ericsson, Martin G., Cedar Falls
Erikson, Roland E., Davenport

- Erskine, Arthur W., Cedar Rapids
 Estes, Maurice, Cedar Rapids
 Evans, Harold J., Chicago, Ill.
 Evans, John G., New Hartford (L.M.)
 Evans, William I., Sac City
 Evers, Alvin E., Pella
- Faber, Luke A., Dubuque
 Fagen, Rodney P., Des Moines
 Fail, Charles S., Adel
 Fain, William R., Des Moines
 Fallows, Howard D., Mason City (L.M.)
 Farnsworth, Harold E., Storm Lake
 Farnum, Earl P., Sibley (L.M.)
 Faust, John H., Manson
 Fee, Charles H., Denison
 Fee, Knight E., Toledo
 Feher, Karoly I., Clarinda
 Feightner, Robert L., Fort Madison
 Feldick, Harley G., Buffalo Center
 Fellows, Joseph G., Ames
 Felter, Allan G., Van Meter
 Fenton, Charles D., Bloomfield
 Fenton, Robert L., Centerville
 Ferguson, John W., Newton
 Ferlic, Rudolph J., Carroll
 Fesenmeyer, Charles R., Davenport
 Feuling, John C., Des Moines
 Field, Charles A., Cresco
 Field, George A., Des Moines (L.M.)
 Field, Grace E. W., Juneau, Alaska
 Fields, Robert B., LaPorte City
 Fieseler, Walter R., Fort Dodge
 Fieselmann, George F., Spencer
 Files, Edward H., Cedar Rapids
 Fillenwarth, Floyd H., Charles City
 Finch, George H., Des Moines
 Fisch, Roman J., LeMars
 Fishman, Harlow J., Holstein
 Fisk, Charlotte, Des Moines
 ★Fitch, Robert E., Des Moines
 Fitzgerald, Joseph D., Sloan
 Fitzpatrick, Dennis F., Iowa City
 Flannery, Francis E., Cedar Rapids
 Flater, Norman C., Floyd
 Fleischman, Abraham G., Des Moines
 Fleming, Edward F., Rockwell
 Flickinger, Roger R., Mason City
 Flocks, Rubin H., Iowa City
 Floersch, Eugene B., Council Bluffs
 Floyd, Mark L., Iowa City
 Flynn, Charles H., Clarinda
 Flynn, James R., Jr., Cedar Rapids
 Flynn, Robert E., Iowa City
 Foley, Fred C., Newell (L.M.)
 Foley, Walter E., Davenport
 Foley, Walter E., Jr., Davenport
 Forbes, Stephen A., Iowa City
 Fordyce, Frank W., Des Moines
 Foss, Robert H., Clinton
 Foster, Morgan J., Cedar Rapids
 Foster, Warren H., Clinton
 Foster, Wayne J., Cedar Rapids
 Foulk, Frank E., Des Moines
 Fourt, Arthur S., Melbourne
 Fowler, Charles C., Lovilia (L.M.)
 Fowler, Willis M., Iowa City
 Fox, Charles I., Pharr, Texas (L.M.)
 Fox, LeRoy J., Des Moines
 Fox, Ray A., Charles City
 Fox, Stephan, Ottumwa
 Franchere, Chetwynd M., Mason City
 Franey, William E., Cedar Rapids
 Frank, Louis J., Sioux City
 Frank, Owen L., Maquoketa
 Franklin, George W., Jefferson (L.M.)
 Franklin, Murray, Iowa City
 Fransco, Peter P., Ruthven
 Fraser, James B., Des Moines
 Fraser, John H., Monticello
 Frech, Raymond F., Newton
 Frederickson, Adolph R., Lansing
 Freligh, Clarence N., Waucoma
 French, Royal F., Marshalltown
 French, Valiant D., St. Joseph, Mo.
 Frenkel, Hans S., Clarinda
 Friday, Walter C., Burlington
 Frink, Lyle F., Spencer
 Fritch, Arthur F., Decorah
 Fritz, Lafe H., Dubuque (L.M.)
 ★From, Paul, West Des Moines
 Frost, Loraine H., Iowa City
 Fry, Gerald A., Vinton
 Fuerster, Frederick, Dubuque
 Fullerton, Oscar L., Redding (L.M.)
 Fullgrabe, Emil A., Sioux City
 Funk, David C., Iowa City
- Gaard, Rasmus R., Radcliffe
 Galinsky, Leon J., Des Moines
 Gallagher, John P., Oelwein
 Galvin, Robert J., Oelwein
 Gamble, Robert A., Madrid
 Gamet, Elmo E., Lamoni
 Gamet, Joseph H., Cedar Falls
 Gann, Edward R., Sigourney
- Gantz, Albert J., Greenfield
 Ganzhorn, Harold L., Mapleton
 Gardner, Harold O., Waterloo
 Gardner, John R., Lisbon (L.M.)
 Gardner, Paul E., New Hampton (L.M.)
 Garland, John C., Marshalltown
 Garner, John W., Des Moines
 Garred, John L., Whiting
 Garside, Arthur A., Davenport
 Garvy, Andrew C., Iowa City
 Gauger, John W., Early
 Gaukel, Leo A., Onawa
 Gault, James B., Creston
 Gearhart, George W., Springville
 Gee, Kenneth J., Shenandoah
 Gelfand, Arthur B., Sioux City
 George, Everett M., Des Moines
 George, Louis A., Remsen
 Gerard, Russell S., II, Waterloo
 Gerken, James F., Waterloo
 Gernsey, Merritt N., Long Beach, Calif. (L.M.)
 Gerstman, Herbert, Marion
 Gessford, Howard H., George
 Getty, Everett B., Primghar
 Gibbon, William H., Sioux City
 Gibbs, George M., Burlington
 Gibson, Chelsea D., Sac City
 Gibson, Douglas N., Des Moines
 Gibson, Paul E., Des Moines
 Gibson, Preston E., Davenport
 Giegerich, Walter F., Atlantic
 Giles, George C., Oakland (L.M.)
 Gilfillan, Clarence D. N., Bloomfield
 Gilfillan, Earl E., Bloomfield
 Gilfillan, Homer J., Bloomfield (L.M.)
 Gilfillan, Homer J., Jr., Bloomfield
 Gillett, Francis A., Oskaloosa
 Gillies, Carl L., Iowa City
 Gillmor, Benjamin F., Red Oak (L.M.)
 Gittins, Thomas R., Sioux City
 Gittler, Ludwig, Fairfield
 Givens, H. Frank, West Bend (L.M.)
 Gleeson, John J., Vail
 Glesne, Orvin G., Dubuque
 Glesne, Otto N., Fort Dodge
 Glomset, Daniel A., Des Moines
 Glomset, Daniel J., Des Moines
 Goad, Robley R., Muscatine
 Godbey, Maunis E., Fort Madison
 Goddard, Chester R., Guttenburg
 Goding, Ray F., Guthrie Center
 Goebel, Clarence J., Sioux City
 Goen, Edwin J., Charles City
 Goenne, William C., Davenport
 ★Goenne, William J., Jr., Davenport
 Goggin, John G., Ossian
 Goggin, Phoebe T., Ames
 Goldberg, Louis, Des Moines
 Goodenow, Sidney B., Colo
 Goodman, Lawrence O., Marshalltown
 Gordon, Arnold M., Des Moines
 Gordon, Jack, Fort Dodge
 Gorrell, Ralph L., Clarion
 Gosline, Harold I., Woodward
 Gottlieb, Jacques S., Iowa City
 Gottsch, Edwin J., Shenandoah
 Gould, George R., Conrad (L.M.)
 Gould, Isaac L., Des Moines
 Gower, Walter E., Fort Dodge
 Graham, James W., Sioux City
 Grams, LaVerne F., Hartley
 Gran, Albert G., Storm Lake
 Grandinetti, Arthur F., Oelwein
 Grant, John G., Ames
 Grau, Amandus H., Denison
 Graves, Charles C., Jr., Des Moines
 Gray, Charles W., Ottumwa
 Gray, Henry A., Keokuk (L.M.)
 Gray, Ralph E., Eldora
 Greco, Donald J., Des Moines
 Greenblatt, Jerald, Cedar Rapids
 Greenhill, Solomon, Des Moines
 Greenleaf, John S., Iowa City
 Gregg, John B., Iowa City
 Greteman, Theodore J., Dubuque
 Griffin, Charles C., Dyersville
 Griffin, Clark C., Jr., Vinton (L.M.)
 Griffin, Frank L., Baldwin
 Griffin, John M., Des Moines (L.M.)
 Griffin, Robert E., Sheldon
 Griffith, William O., Council Bluffs
 Grimmer, George T., Iowa City
 Groben, Elmer S., Columbus Junction
 Grossman, Milton D., Sioux City
 Grossman, Raymond S., Marshalltown
 Grossman Edward B., Orange City
 Grothaus, Dell L., Delta
 Grubb, Merrill W., Galva
 Guggenheim, Paul, Council Bluffs
 Gugle, Lloyd J., Ottumwa
 Gunn, Ross E., Boone
 Gurau, Henry H., Des Moines
 Gutch, Roy C., Chariton
- Gutch, Thomas E., Albia (L.M.)
 Gutenkauf, Charles H., Des Moines
- Hagen, Edward F., Decorah
 Haggard, David K., Harwarden
 Haines, Diedrich J., Des Moines
 Hale, Albert E., Mason City
 Hall, Bonnybel A., Maynard
 Hall, Cluley C., Maynard
 Hall, Forest F., Webster City
 Halloran, William H., Audubon
 Halpin, Lawrence J., Cedar Rapids
 Hamilton, Benjamin C., Jr., Jefferson
 Hamilton, Cecil V., Garner
 Hamilton, Harriet S., Council Bluffs (L.M.)
 Hamilton, Henry E., Iowa City
 Hamilton, William K., Iowa City
 Hammer, Raymond W., Sioux City
 Hanchett, McMicken, Council Bluffs
 Hands, Sidney G., Davenport
 Hansell, William W., Des Moines
 Hansen, Fred A., Red Oak
 Hansen, Hans, Logan
 Hansen, Niels M., Des Moines
 Hansen, Robert R., Marshalltown
 Hansen, Russell R., Storm Lake
 Hanske, Edward A., Des Moines
 Hanson, Carl A., Waterloo
 ★Hanson, Lawrence C., Jefferson
 Hansmann, Irving, J., Council Bluffs
 Hardin, John F., Bedford
 Hardin, Robert C., Iowa City
 Hardwig, Oswald C., Waverly
 Hardwig, Robert P., Waverly
 Harken, Conreid R., Osceola
 Harkness, Gordon F., Davenport
 Harman, Dean W., Glenwood
 Harms, George E., Norway
 Harnagel, Edward J., Des Moines
 Harness, William N., Monterey, Calif.
 Harper, George E., Fort Madison
 Harper, Harry D., Fort Madison
 Harper, William H., Keokuk
 Harper, William H., Jr., Keokuk
 Harrington, Arlan F., Cedar Rapids
 Harrington, Raymond J., Sioux City
 Harris, Clinton E., Grinnell
 Harris, D. Dale, Marshalltown
 Harris, Grover W., Marshalltown
 Harris, Herbert H., Sioux City
 Harris, Jack T., Luverne
 Harris, Ray R., Dubuque
 Hart, Paul V., Des Moines
 Hartley, Bryon D., Mount Pleasant
 Hartman, Frank T., Waterloo (L.M.)
 Hartman, Howard J., Waterloo
 Hartsaw, John E., Sigourney
 Hartung, Walter, Davenport
 Harvey, David R. M., Iowa City
 Harvey, Glen W., Cedar Rapids
 Harwood, Arthur M., Sigourney
 Haskell, Jack G., Reinbeck
 Havlik, Al J., Tama
 Hawkins, Robert E., Council Bluffs
 Hawthorne, Grace M., Oelwein
 Hayden, Milford D., Marcus
 Hayes, William P., Cedar Rapids
 Hayne, Willard W., Des Moines
 Hazlet, Kenneth K., Dubuque
 Heady, Conda C., Bloomfield (L.M.)
 Heald, Clarence L., Sigourney (L.M.)
 Heathman, Frank E., Pocahontas (L.M.)
 Hecker, John T., Cedar Rapids
 Heeren, Ralph H., Des Moines
 Heetland, Louis H., Sibley (L.M.)
 Heffernan, Chauncey E., Sioux City
 Hegg, Lester R., Rock Valley
 Heilman, Elwood H., Ida Grove
 Heilmann, Verne R., Sioux City
 Heinmiller, E. Clifford, Fort Madison
 Heise, Carl A., Jr., Jewell
 Heise, Harris R., Marshalltown
 Heise, Robert H., Story City
 Heitzman, Paul O., Cedar Rapids
 Heles, John B., Dubuque
 Henderson, Lauren J., Cedar Falls
 Henderson, Walker B., Oelwein
 Hendricks, Atlee B., Davenport
 Hendrickson, Alvin H., Sioux City
 Henkin, John H., Sioux City
 Hennes, Raphael J., Oxford
 Hennessey, John M., Manilla
 Hennessy, Felix A., Calmar
 Hennessy, J. Donald, Council Bluffs
 Henningsen, Artemus B., Clinton
 Henry, Clyde A., Farson (L.M.)
 Henry, Hiram B., Des Moines
 Henslin, Merrill E., Cresco
 Henstorf, Harold R., Shenandoah
 Herman, John C., Boone
 Herny, Peter M., Prairie City

Herrick, Thomas G., Gilmore City
Herrick, Walter E., Ottumwa
Herrmann, Christian H., Jr., Amana
*Hersch, Thomas F., Cedar Rapids
Hersey, Nelson L., Independence
Hess, John, Jr., Des Moines
Hesser, Frederick H., Albany, N. Y.
Heusinkveld, Henry J., Clinton
Hickenlooper, Carl B., Winterset
Hickerson, Luther C., Brooklyn
Hickey, Robert C., Iowa City
Hickman, Charles S., Centerville
Hickman, Donald M., Indianola
Hicks, Edgar O., Clinton
Hicks, Murwyn L., Dubuque
Hicks, Wayland K., Sioux City
Hight, William B., Des Moines (L.M.)
Hilberg, Albert W., Iowa City
Hildebrand, Howard H., Ames
Hill, Christine E., Virginia Beach, Va. (L.M.)
Hill, Don E., Clinton
Hill, James W., Mount Ayr
Hill, Julia F., Des Moines (L.M.)
Hill, Lee F., Des Moines
Hill, Richard W., Lake Mills
Hills, Henry M., Lamoni (L.M.)
Hirst, Donald V., Council Bluffs
Hobart, Francis W., Lake City
Hoeven, Edward B., Ottumwa
Hoffman, Alfred A., Waterloo
Hoffman, Paul M., Tipton
Hoffmann, Robert W., Des Moines
Hofmann, William P., Davenport
Hogenson, George B., Eagle Grove
Hollander, Werner M., Davenport
Hollis, Edward L., Marengo
Holman, Henry D., Mason City
Holtey, Joseph W., Ossian
Hombach, Walter P., Council Bluffs
Hommel, Placido R. V., Elkader
Honke, Edward M., Sioux City
Hooper, Lester E., Indianola
Hopkins, David H., Glidden
Hornaday, William L., Des Moines
Hornberger, John R., Manning
Horton, Robert R., Algona
Hosford, Horace F., Burlington
Hoskins, James H., Des Moines
Houghton, Earl J., Bettendorf
Houlahan, Jay E., Mason City
Houlihan, Francis W., Ackley
Houser, Blanche W., Cedar Rapids
Houser, Cass T., Cedar Rapids
Housholder, Harold A., Winthrop
*Houston, Bush, Nevada
Howar, Bruce F., Webster City
Howard, Dwayne E., Des Moines
Howard, Lloyd G., Council Bluffs
Howe, Gerald W., Marengo
Howell, Elias B., Ottumwa
Hoyt, John L., Creston
Hruska, Glen J., Belmond
Huber, Robert A., Charter Oak
Huber, Robert H., Osage
Hudek, Joseph W., Garnavillo
Hudson, Jessie B., Hampton
Huffman, William C., Iowa City
Hughes, Parker K., Des Moines
Hughes, Robert O., Ottumwa
Hull, Henry C., Jr., Washington (L.M.)
Hulse Roy A., Burlington
Hungerford, Louis N., Jr., Keosauqua
Hunt, Van W., Mason City
Hunting, Ralph D., Cedar Rapids
Huntley, Charles C., Avoca
Hurevitz, Hyman M., Davenport
Huston, Daniel F., Burlington
Huston, Herbert M., Ruthven (L.M.)
Huston, Marshall D., Cedar Falls
Huston, Paul E., Iowa City
Hyatt, Charles N., Jr., Humeston
Hyndman, Olan R., Davenport
Ihle, Charles W., Cleghorn (L.M.)
Ingham, Paul G., Mapleton
Ingraham, David R., Sewal
Irish, Thomas J., Forest City
Irving, Noble W., Jr., West Des Moines
Isenberg, Bertice A., Lohrville
Isham, Robert B., Osage
Jackson, James M., Jefferson
Jackson, James S., Mount Pleasant
Jackson, Robert L., Iowa City
Jacobs, Carl A., Sioux City
Jacoby, James A., Burlington
Jacques, Lewis H., Lone Tree
Jaenicke, Kurt, Clinton
James, Audra D., Des Moines
James, David W., Des Moines
James, Lora D., Fairfield
James, Peter E., Elk Horn
Jameson, Robert E., Davenport
Janse, Phillip V., Algona
January, Lewis E., Iowa City
Jardine, George A., New Virginia
Jarvis, Fred J., Oskaloosa (L.M.)
Jarvis, Harry D., Chariton
Jeans, Philip C., Iowa City
Jeffries, Milo E., Marshalltown
Jeffries, Roy R., Waukon
Jenkins, George A., Albia
Jenkins, George D., Burlington
Jenkins, Hanley F., Ogden
Jenkinson, Harry R., Iowa City
Jenks, Alonzo L., Jr., Des Moines
Jensen, Arthur E., Humboldt
★Jensen, Kenneth V., Newton
Jensen, LeRoy E., Audubon
Jerdee, Ingebrecht C., Clermont
Jirsa, Harold O., Cedar Rapids
Johann, Albert E., Des Moines
Johnson, Aaron Q., Sioux City
Johnson, Albert P., Sigourney (L.M.)
Johnson, Aldis A., Council Bluffs
Johnson, Clarence A., Coon Rapids
★Johnson, Francis N., Madrid
Johnson, George M., Marshalltown (L.M.)
Johnson, G. Raymond, Ottumwa
Johnson, Harvey A., Atlantic
Johnson, J. A. William, Marshalltown
★Johnson, Merlin H., Iowa City
Johnson, Norman M., Clarinda
Johnson, Richard M., Denison
Johnson, Robert J., Iowa Falls
Johnson, Robert W., Clinton
Johnson, Wendell A., Emmetsburg
Johnson, William A., Iowa Falls
Johnston, C. Harlan, Des Moines
Johnston, Florence D., Cedar Rapids
Johnston, George B., Estherville
Johnston, Harry L., Ames
Johnston, Helen, Des Moines
Johnston, Howard H., Hampton
Johnston, Kenneth L., Oskaloosa
Johnston, Wayne A., Dubuque
Johnstone, William H., Des Moines
Johnstone, Alexander A., Keokuk
Joiner, Bennett A., Iowa City
Jones, Cecil C., Des Moines
Jones, Charles L., Gilmore City
Jones, Clare C., Spencer
Jones, Harold W., Sioux City
Jones, Harry J., Cedar Rapids
Jones, Henry D., Schleswig
Jones, Louis H., Wall Lake (L.M.)
Jongewaard, Albert J., Jefferson
Jongewaard, Jean, Jefferson
Jongewaard, Robert E., Des Moines
Joranson, Robert E., Council Bluffs
Jordan, John W., Maquoketa
Jowett, John R., Clinton
Joyce, George T., Mason City
Joynt, Albert J., Waterloo
Joynt, Martin J., LeMars
Joynt, Michael F., Marcus
Judiesch, Kenneth J., Iowa City
Junger, Emil C., Soldier
Jurgensen, William W., Sioux City
Kaack, Harry F., Jr., Clinton
Kadel, Merl A., Laurens
Kafka, Richard M., Des Moines
Kahler, Hugo V., Reinbeck
Kane, Thomas E., Boone
Kanealy, John F., Cedar Rapids
Kapke, Franklin W., Mason City
Kaplan, David D., Sioux City
Kas, Thomas D., Sutherland
Kasiske, Walter B., Keokuk
Kassmeyer, John C., Dubuque
Kast, Donald H., Des Moines
Katherman, Charles A., Sioux City
Katz, Irving A., Des Moines
Katzmann, Frederick S., Des Moines
Kauffman, William A., Marshalltown
Kauffman, Ernest L., Fort Atkinson (L.M.)
Keech, Roy K., Cedar Rapids
Keen, Burlin E., Des Moines
Keeney, George H., Malara
Keettel, William C., Jr., Iowa City
Kehoe, Joseph L., Davenport
★Keith, Philip G., Des Moines
Keith, John J., Marion
Kelberg, Melvin R., Sioux City
Kelley, Edmund J., Des Moines
Kelley, Lawrence E., Des Moines
Kelly, Dennis H., Des Moines
Kelly, John F., Sioux City
Kelly, Joseph I., Burlington (L.M.)
Kenefick, John N., Algona
Kennedy, Elizabeth S., Oelwein (L.M.)
Kennedy, William C., Somers
Kenney, Bernard E., Woodbine
Keohen, Gerald F., Dubuque
Kern, Lester C., Waverly (L.M.)
Kerr, H. Dabney, Iowa City
Kerr, Johnson H., Akron
Kerr, W. Hawley, Hamburg
Kershner, Frank O., Clinton
Kersten, Ernest M., Fort Dodge
Kersten, Herbert H., Fort Dodge
Kerwick, Joseph M., New Hampton
Kessler, Joseph, Des Moines
Kestel, John L., Waterloo
Ketner, Lester E., Oelwein
Kettelkamp, Enoch G., Monona
Keyser, Earl L., Marshalltown
Keyser, Ralph E., Marshalltown
Kieck, Ernest G., Cedar Rapids
Kienzle, William K., Wellsburg
Kiesau, Frederick W., Postville
Kiesau, Milton F., Postville
Kiesling, Harry F., Lehigh
Kilgore, Ben F., Des Moines
Kimball, John E., West Liberty
Kimberly, Lester W., Davenport
Kinard, Kenneth H., Iowa City
King, David H., Batavia (L.M.)
King, Dean H., Spencer
King, Oran W., Des Moines
★King, Ray E., Des Moines
King, Ross C., Clinton
Kingsbury, Charles L., Keokuk
Kirch, Walter A., Des Moines
Kirkegaard, C. Smith, Estherville
Kirkendall, Walter M., Iowa City
Kitson, Walter W., Atlantic
Klein, John L., Jr., Muscatine
Klein, Robert F., Muscatine
Kleinberg, Henry E., Des Moines
Kline, Samuel, Sioux City
Klockslem, Harold L., Des Moines
Klockslem, Roy G., Rockwell City
Klok, George J., Council Bluffs
Kluever, Herman C., Fort Dodge
Knight, Benjamin L., Cedar Rapids
Knight, Edson C., Marshalltown
Knight, Russell A., Rockford
Knipfer, Robert L., Jesup
Knoll, Albert H., Phoenix, Ariz.
Knosp, Norman C., Belle Plaine
Knott, Peirce D., Sioux City
Knouf, Clare E., Lake City
Knowles, Fred L., Fort Dodge
Knudsen, Hubert K., Clinton
Koch, George W., Anaheim, Calif. (L.M.)
Knoelling, Lloyd H., Newton
Koester, John F., Davenport
Koontz, Lyle W., Vinton
Kopsa, Walter J., Tipton
Korfmacher, Edwin S., Grinnell
Kornder, Louis H., Davenport
Korns, Horace M., Iowa City
Kos, Clair M., Iowa City
Koser, Donald C., Cherokee
Kramer, Jack, Iowa City
★Krause, Robert E., Ottumwa
Krepelka, George E., Osage
Kresock, Joseph W., Davenport
Krettek, John, Council Bluffs
Kridelbaugh, William W., Iowa City
*Kriebs, Frank J., Elkport (L.M.)
Krigsten, Joe M., Sioux City
Krigsten, William M., Sioux City
Krouse, Howard, Seattle, Wash.
Kruckenberg, William G., Cedar Rapids
Kruml, Joseph G., Council Bluffs
Kruse, Otto E., Tipton
Kruse, Rufus H., Conrad
Kuehn, Willard G., Clarinda
Kuehnle, Gustave R., Dubuque
Kuhl, Augustus B., Davenport
Kuhl, Augustus B., Jr., Davenport
Kuhl, Robert H., Creston
Kuhn, Leo C., Decorah
Kuhn, Mark A. R., Waterloo
Kuhn, Nell, Iowa City
Kuker, Leo H., Carroll
Kulp, Raymond R., Davenport
★Kurth, Robert J., Waterloo
Kurtz, Cecilia M., Cedar Rapids
Kyle, William S., Washington
Lebagh, Nicholas W., Mystic
La Force, Edward F., Burlington (L.M.)
Lagen, Mansfield S., Dubuque
Laidley, Wallace G., Ogden
Lamb, Frederick H., Davenport
Lamb, Harry H., Davenport
Lambrecht, Paul, Des Moines

- Lampe, Elmer L., Bellevue
Lande, Jacob N., Sioux City
★Landis, Sylvanus N., Des Moines
Langford, William R., Cedar Rapids
Langworthy, Henry G., Dubuque
Lannon, James W., Mason City
Larimer, Robert N., Sioux City
Larsen, Elmer A., Centerville
Larsen, Frank S., Fort Dodge
Larsen, Harold T., Fort Dodge
Larsen, Lawrence V., Harlan
Larson, Andrew G., Dickens
Larson, Carroll B., Iowa City
Larson, Gerald E., Elk Horn
Larson, Lester E., Decorah
Larson, Marvin O., Hawarden
Latchem, Charles W., Des Moines
LaTona, Joseph H., Council Bluffs
Laube, Paul J., Dubuque
Laughlin, Ralph M., Cedar Rapids
Lauder, Frank T., San Diego, Calif. (L.M.)
Lavender, John G., George
Lawlor, Jeremiah F., Cherokee
Lawrence, George H., St. Louis, Mo.
Lawrence, Joseph W., Dubuque
Layton, Jack M., Iowa City
Lease, Nimrod J., Crawfordsville (L.M.)
Lederman, Joseph, Oskaloosa
Lee, Gisle M., Thompson (L.M.)
Lee, Robert W., Algona
Lee, Wayne R., Burlington
Leehey, Paul J., Independence
Lehman, Emery W., Des Moines
Lehr, Sylvan M., Cedar Rapids
Leibovitz, Martin, Iowa City
Leighton, Lewis L., Fort Dodge
Leinbach, Samuel P., Belmond
Leinfelder, Placidus J., Iowa City
Leiter, Herbert C., Sioux City
Leith, George G., Wilton Junction
Lekwa, Alfred H., Story City
Lemon, Kenneth M., Oskaloosa
Lenaghan, Robert T., Clinton
Lenzmeier, Albert J., Davenport
Leonard, Earl R., Medford, Ore.
Leonard, Frederick S., Dubuque
★Leonard, Thurman K., Madrid
LePoidevin, Jean S., Waterloo
Levin, Harry M., Waterloo
Levy, James W., Sioux City
Lewis, Bernard I., Iowa City
Lewis, E. Faye C., Webster City
Lewis William B., Webster City
Lichter, Theodore W., Edgewood
Lierle, Dean M., Iowa City
Lierman, Clifford E., Lake View
Liken, John A., Creston
Limbert, Edwin M., Council Bluffs
Limburg, J. Irwin, Jefferson
Limburg, John I., Jr., Jefferson
Lincoln, Simon E., Des Moines
Lindholm, Hugo A., Armstrong
Lindley, Ellsworth L., Cedar Rapids
Lindsay, Vernard T., Glidden
Liska, Edward J., Ute
Lister, Kenneth E., Ottumwa
Lloyd, John M., Washington
Locher, Robert C., Cedar Rapids
Lock, Arthur L., Rock Valley
Lockhart, Harold A., Cedar Rapids
Lodwick, Gwilym S., Jr., Iowa City
Loeck, John F., Independence
Loes, Anthony M., Dubuque
Lohman, Frederick H., Waterloo
Lohmann, Carl J., Burlington
Lohr, Phillips E., Churidan
Long, Draper L., Mason City
Long, Llewelyn L., Atlantic
Longworth, Wallace H., Boone
Loomis, Frederic G., Waterloo
Loose, David N., Maquoketa (L.M.)
Lorfeld, Gerhard W., Davenport
Losh, Clifford W., Des Moines
Losh, Clifford W., Jr., Des Moines
Love, Francis L., Iowa City (L.M.)
Lovejoy, E. Parish, Des Moines
Lovelady, Ralph, Sidney
Lovett, Earl D., Vinton
Loving, Luther W., Estherville
Lowry, Charles F., Council Bluffs
Loxterkamp, Edward O., Rolfe
Lueck, Arthur G., Des Moines
Luehrsmann, Bernard C., Dyersville
Luehrsmann, Bernard H., Dyersville
Luginbuhl, Christian B., Des Moines
Lundwick, Arthur W., Gowrie
Luse, Ralph F., Clinton
Lutton, John D., Sioux City
Lyman, Frank L., Jr., Fort Madison
Lynn, Arthur R., Marshalltown
Lynn, Clarence E., Dubuque
Lyons, Mary L., Des Moines
MacLeod, Hugh G., Greene
★MacNaughton, Luther D., Eagle Grove
McAllister, James, Odebolt
McBride, James T., Des Moines (L.M.)
McBride, Robert H., Sioux City
McCaffrey, Eugene H., Des Moines
McCall, John H., Allerton
McCarthy, Frank D., Sioux City
McCartney, William H., Des Moines
McClean, Earl D., Des Moines
McClintock, John T., Iowa City (L.M.)
McClure, Ernest C., Bussey (L.M.)
McClure, Gail A., Ames
McClurg, F. Haven, Fairfield
McConkie, Edwin B., Cedar Rapids
McConkie, Willis L., Carroll
McCoy, Harold J., Des Moines
McCoy, John T., Cedar Falls
★McCrary, W. Ashton, Lake City
★McCrea, Eppie, Eddyville (L.M.)
McCreedy, Murry L., Washington
McCreight, George C., Des Moines
McCuiston, Harry M., Sioux City
McCullough, John H., Waukon
McDonald, James E., Mason City (L.M.)
McDowall, Gilbert T., Gladbrook
McDowell, William O., Grundy Center (L.M.)
McFadden, F. Ross, Davenport
McFarland, Guy E., Ames
McFarland, Guy E., Jr., Ames
McFarland, Julian E., Ames
McGahey, William B., Webster City
McGarvey, Cornelius J., Des Moines
McGill, Arthur A., Danbury
McGivra, Arthur L., Sioux Center
McGinnis, George C., Fort Madison
McGrane, Merle J., New Hampton
McGready, Joseph H., Independence (L.M.)
McGuire, Kenneth L., Keota
McGuire, Roy A., Fairfield
McHugh, Charles P., Sioux City
McIllece, Raymond C., Fort Madison
McIntosh, Philip D., Ottumwa
McIntyre, Caryl C., Waterloo
McKay, Richard V., Jr., Dubuque
McKean, Frank F., Allison
McKitterick, John C., Burlington
McLaughlin, Charles W., Washington (L.M.)
★McLean, Ray A., Fayette (L.M.)
McMahon, Thomas, Garner (L.M.)
McMeans, Thomas W., Davenport
McMillan, James T., III, Des Moines
McMillen, Arch S., Fort Dodge
McMurray, Edward A., Newton
McNamara, Robert J., Dubuque
McNamee, Jesse H., Des Moines
McPherrin, Henry I., Des Moines (L.M.)
McQuiston, J. Stuart, Cedar Rapids
McTaggart, William B., Fort Dodge
McVay, Melvin J., Lake City
Mackin, M. Charles, Des Moines (L.M.)
Macrae, James G., Creston (L.M.)
Magaret, Ernest C., Glenwood
Magdsick, Carl C., Charles City
Magee, Emery E., Waterloo
Mahoney, James D., Council Bluffs
Mailliard, Robert E., Storm Lake
Maixner, William D., Ottumwa
Maland, Donald O., Cresco
Maloy, Wayland H., Shenandoah
Manning, Ephraim L., Davenport
★Mangan, J. Thomas, Forest City
Mantz, Russell L., Cedar Rapids
Maplethorpe, Charles W., Toledo
Maplethorpe, Charles W., Jr., Toledo
Marble, Edwin J., Marshalltown
Marble, Pearl L., Liscomb (L.M.)
Marble, Willard P., Marshalltown
Margulies, Harold, Des Moines
Marinos, Harry G., Mason City
Maris, Cornelius, Sanborn
Maris, Gerrit, Hull
Mark, Edward M., Clarksville
Mark, Milton S., Des Moines
Marker, John I., Davenport
Marme, George W., DeWitt
Marquis, Fred M., Waterloo
Marquis, George S., Des Moines
Marsh, Frederick E., Council Bluffs
Marsh, Frederick E., Jr., Council Bluffs
Martin, James W., Holstein
Martin, Josef R., Carroll
Martin, Lee R., Council Bluffs
Martin, Ronald F., Sioux City
Martin, Sidney D., Carroll (L.M.)
Mason, James R., Ainsworth
Mason, Robert P., Des Moines
Mason, Stella M., Mason City (L.M.)
Mast, Truman M., Washington
Mater, Dwight A., Knoxville
Mater, Roy V., Knoxville
Matheson, John H., Des Moines
Mathiasen, Aileen E., Council Bluffs
Mathiasen, Emmett B., Council Bluffs
Mathiasen, Henning W., Council Bluffs
Mathiasen, John W., Council Bluffs
Matthey, Carl H., Davenport
Matthey, Walter A., Davenport
Mattice, Lloyd H., Sheldon
Mattice, Roger J., Sioux Rapids
Mattison, George, Akron
Mauritz, Emory L., Des Moines
Maxwell, Charles T., Sioux City
Maxwell, John, What Cheer
Maxwell, John R., Iowa City
May, George A., Des Moines
May, Samuel C., Iowa City
Maynard, James H., Shelby
Mazur, Theodore T., Des Moines
Mead, Frank N., Cedar Falls (L.M.)
Meffert, Clyde B., Cedar Rapids
Megorden, William H., Mount Pleasant
Mellen, Robert G., Clinton
Meredith, Loren K., Des Moines
Merillat, Herbert C., Des Moines
Merkel, Arthur E., Des Moines
★Merkel, Bryon M., Des Moines
Merrill, Charles H., Oskaloosa
Merritt, Arthur M., Des Moines
Merselis, Harold K., Audubon
Mershon, Clinton E., Adel (L.M.)
Meyer, Paul G., Manchester
Meyers, Frank W., Dubuque (L.M.)
Michener, Robert B., Iowa City
Mighell, Scott J., Des Moines
Mikelson, Clarence J., Waterloo
Miller, Brownlow B., Tabor
Miller, Chester I., Iowa City
Miller, Donald F., Williamsburg
Miller, Enos D., Wellman
Miller, Howard L., Cedar Rapids
Miller, Jay R., Wellman
Miller, Lawrence A., North English
Miller, Robert C., Waterloo
Miller, Temple M., Muscatine
Miller, Wilbur R., Iowa City
Millice, Glenn S., Battle Creek
Mills, Frank W., Ottumwa (L.M.)
Miltner, Leo J., Davenport
Minassian, Harootune A., Des Moines (L.M.)
Minassian, Thaddeus A., Des Moines
Miner, James B., Jr., Charles City
Minkel, Roger M., Fort Dodge
Mirick, Donald F., Clinton
Missman, Walter F., Klemme
Mitchell, Claire H., Indianola
★Mitchell, Richard C., Iowa City
Moe, Ralph H., Griswold
Moen, Stanley T., Cedar Rapids
Moerke, Robert F., Burlington
Moershel, Henry G., Homestead
Moershel, William J., Cedar Rapids
Mol, Henry L., Grundy Center
Monnig, Philip J., Des Moines
★Montgomery, Albert E., Jefferson
Montgomery, George E., Ames
Montgomery, Guy E., Washington
Moon, Barclay J., Cedar Rapids
Mooney, James C., Des Moines
Moore, Edson E., Fort Dodge
Moore, Harold H., Ottumwa
Moore, Harris C., Clearfield
Moore, Jesse C., Eldon
Moore, J. George, Iowa City
Moore, Pauline V., Iowa City
Moore, Richard M., St. Louis, Mo.
Moorehead, Harold B., Underwood
Mordaunt, Richard H., Nevada
Morgan, Harold W., Mason City
Morgan, Paul W., Mason City
Morganthaler, Otis P., Templeton (L.M.)
Moriarty, John F., Atlantic
Moriarty, Lauren R., Kansas City, Kan.
Morris, Lucien E., Iowa City
Morris, Zenella, E. N., Stockport (L.M.)
Morrison, John R., Carroll
Morrison, John W., Alta
Morrison, Roland B., Carroll
Morrison, Wesley J., Cedar Rapids (L.M.)
Morrissey, George E., Davenport

- Morrissey, William J., Des Moines
Morse, Charles H., Eagle Grove (L.M.)
Morton, Elmer E., Manning (L.M.)
Morton, Matthew T., Estherville
Mosher, Martin L., Jr., Iowa City
Mott, William H., Farmington (L.M.)
Mountain, George E., Des Moines
Mugan, Robert C., Sioux City
★ Mulder, Lambertus, Sioux Center
Mullmann, Arnold J., Perry
Mulsow, Frederick W., Cedar Rapids
Munger, Elbert E., Jr., Spencer
Murchison, Kenneth, Sidney
Murphey, Arlo L., Fredericksburg
Murphy, Cornelius B., Alton
Murphy, George C., Waterloo
Murphy, James H., Des Moines
Murray, Frederick G., Cedar Rapids
Murray, Jonathan H., Burlington
Murtaugh, James E., New Hampton
Myerly, William H., Des Moines
Myers, Edward M., Dallas, Tex. (L.M.)
Myers, Judson W., Postville
Myers, Kermit W., Sheldon
Myers, Robert W., Monticello
- Nash, Edwin A., Ottumwa
★ Neagle, Paul E., Dubuque
Neal, Emma J., Cedar Rapids
Nederhiser, Morgan I., Cascade
Needles, Roscoe M., Atlantic
Neglia, Fortunato J., Maxwell
Nelken, Leonard, Clinton
Nelken, Viola D., Clinton
Nelson, Arnold L., Des Moines
Nelson, Frederick L., Ottumwa
Nelson, Frederick L., Jr., Ottumwa
Nelson, Harry E., Dayton (L.M.)
Nelson, Leo C., Jefferson
Nelson, Paul O., Emmetsburg
Nelson, Robert J., Clinton
Nemec, Joseph J., Cedar Rapids
Nemmers, Gerald J., Washington
Netolicky, Robert Y., Cedar Rapids
Neufeld, Robert J., Davenport
Neuzil, William J., Cedar Rapids
Newland, Don H., Belle Plaine
Newman, Robert W., Iowa City
Niblock, George F., Derby
Nicholson, Clyde G., Des Moines
Nicholson, Richard W., Paton
Nicoll, Charles A., Panora
Nicoll, David T., Mitchellville (L.M.)
Nielsen, Arnold T., Ankeny
Nielsen, Glen E., Des Moines
Nielsen, Rudolph F., Cedar Falls
Nielson, Arthur L., Council Bluffs
Niemann, Theodore V., Brooklyn
Nierling, Paul A., Cresco
Noble, Nelle S., Des Moines (L.M.)
Noble, Rusl P., Alta
Noe, Carl A., Cedar Rapids
Noe, Charles F., Amana (L.M.)
Nolan, John C., Corning
Nomland, Ruben, Iowa City
Noonan, James J., Marshalltown
Nord, Donald H., Cambridge
★ Nordin, Charles A., Des Moines
Norment, John E., Clinton
North, Frank R., Winfield
Norton, Alva C., Rockwell City (L.M.)
Noun, Louis J., Des Moines
Noun, Maurice H., Des Moines
Nourse, Leslie M., Des Moines (L.M.)
Null, Frederick F., Hawarden
Nyquist, David M., Eldora
- Ober, Frank G., Burlington
O'Brien, Lyl J., Fort Dodge
O'Brien, Stephen A., Mason City
O'Conner, Edwin C., New Hampton
★ Odell, James E., Iowa City
O'Donnell, Joseph E., Clinton
O'Donoghue, Archibald F., Sioux City
O'Donoghue, James H., Storm Lake
Oelrich, Carl D., Sioux Center
Oesterlin, Ernst J., Mount Pleasant
Oggel, Herman D., Maurice (L.M.)
O'Keefe, Paul T., Waterloo
Okerlin, Oscar W., Chariton (L.M.)
O'Leary, Francis B., Sibley
Olsen, Martin I., Des Moines
Olsen, Max E., Minden
Olsen, Ranald E., Milton
Olson, Evelyn M., Winterset
Olson, Russell L., Northwood
Olson, Nels, Lake Mills
O'Neal Harold E., Tipton
Osborn, Clarence R., Dexter
Osinup, Paul W., Sioux City
Osten, Burdette H., Northwood
O'Toole, Laurence C., LeMars
- O'Toole, Roger L., Waterloo
Ottillie, Donald J., Oelwein
Otto, Paul C., Fort Dodge
Owen, William E., St. Ansgar
- Pace, Arthur A., Toledo (L.M.)
Page, Elizabeth B., Keokuk
Page, Wesley M., Montezuma
Pagelsen, Otto H., Iowa Falls (L.M.)
Pahlas, Henry M., Dubuque
Paige, Ralph T., LaPorte City
Painter, J. Carl, Dubuque
Palmer, Carson W., Guttenberg
Palmer, Howard C., Nichols
Palumbo, Louis T., Des Moines
Paragas, Modesto R., Creston
Parish, John R., Grinnell
Parke, John, Cedar Rapids
Parker, Edward S., Ida Grove (L.M.)
Parker, Loran F., Iowa Falls
Parker, Robert L., Des Moines
Parks, Claude O., Iowa City
Parry, Roy E., Scranton
Parsons, John C., Des Moines
Paschal, George A., Webster City
Pascoe, Paul L., Carroll
Patterson, John N., Burlington (L.M.)
Patterson, Roy A., Webster City
Paul, John D., Anamosa
Paul, Richard E., West Des Moines
Paul, Robert D., Anamosa
Paul, William D., Iowa City
Paulsen, Herbert B., Harris
Paulus, Edward W., Iowa City
Paulus, James W., Dubuque
Payne, Roswell H., Exira
Pearlman, Leo R., Des Moines
Pearson, George J., Burlington
Peart, John C., Davenport
Peasley, Harold R., Des Moines
Peck, Raymond E., Davenport
Pedersen, Arthur M., Council Bluffs
Peggs, Harold J., Creston
Peisen, Conan J., Des Moines
Pelz, Werner P., Charles City
Penly, Don H., Cedar Falls
Penn, Eugene C., West Des Moines
Perel, Ada R., Iowa City
Perkins, Franklin C., Hedrick
Perkins, Rollin M., II., Davenport
Perley, Arthur E., Waterloo
Perman, Harvey H., Forest City
Perrin, H. Joyce, Des Moines
Peschau, Waldo E., Cedar Rapids
Petersen, Donal C., Burlington
Petersen, Emil C., Atlantic
Petersen, Millard T., Atlantic
Petersen, Robert E., Dubuque
Petersen, Vernon W., Clinton
Peterson, Evan A., Burlington
Peterson, Frank R., Cedar Rapids
Peterson, John C., Jr., Hartley
Peterson, Ray W., Clear Lake
Pfeiffer, Ernst, Hartley
Pfeiffer, Harry E., Cedar Rapids
Pfohl, Anthony C., Dubuque
Phelan, Mary P., Altoona
Phelps, Charles R., Ottumwa
Phelps, Gardner D., Waterloo
Phelps, Richard E., H., New Sharon
Pheptplace, Willard S., Davenport
Phifer, Robert L., Davenport
Philipp, Roy J., Syracuse, N. Y.
Phillips, Albin B., Clear Lake (L.M.)
Phillips, Allan B., Des Moines
Phillips, Clarence P., Muscatine
Phillips, I. Hildreth, Missouri Valley
Phillips, Walter B., Montezuma
★ Piburn, Marvin, F., Preston
Pickard, John C., Dubuque
Piekenbrock, Frank J., Dubuque
Piercy, Kenneth C., Ames
Pierson, Lawrence E., Sioux City
Pitcher, Arlo L., Belmond
Pitluck, Harry L., Laurens
Plankers, Arthur G., Dubuque
Plass, Everett D., Saranac Lake, N. Y.
(L.M.)
Poepsel, Frank L., West Point
Ponseti, Ignacio V., Iowa City
Poore, Samuel D., Villisca
Porter, Charles E., Redfield
Porter, Richard C., Des Moines
Porter, Robert J., Des Moines
Porter, S. Dale, Grinnell
Posner, Edward R., Des Moines (L.M.)
Posner, Edward R., Jr., Des Moines
Powell, Adrian R., Elkader
Powell, Burke, Albia (L.M.)
Powell, Lester D., Des Moines
Powell, Robert A., Shenandoah
Powers, George H., Shenandoah
- Powers, Henry R., Emmetsburg
Powers, Ivan R., Waterloo
Powers, John L., Estherville
Preece, Wade O., Waterloo
Prentice, George L., Bloomfield
Prescott, Kenneth H., Storm Lake
Presnell, J. William, Scranton (L.M.)
Presnell, William H., Charlotte
Prettyman, Oscar R., Manson
Prewitt, Leland H., Ottumwa
Price, Alfred S., Des Moines
Priessman, Frank A., Keokuk
Priestley, Joseph B., Des Moines
★ Pringle, Jess A., Oconomowoc, Wisc.
(L.M.)
Proctor, Rothwell D., Cedar Rapids
Prouty, James V., Cedar Rapids
Province, William, Jr., Dubuque
Ptacek, Joseph L., Webster City
Pugh, Philip F. H., Sioux City
Pumphrey, Loira C., Keokuk
Puntenney, Andrew W., Boone
Purdy, William O., Des Moines
Putnam, Chester L., Des Moines
- Quinn, Francis P., Dubuque
- Radcliffe, Christian E., Iowa City
Rahn, Gordon, E., Mount Vernon
Ralston, Furman P., Knoxville
Rambo, Cyrus C., Creston
Rambo, David T., Ottumwa (L.M.)
Ramsdell, Stuart T., Clarinda
Randall, John H., Iowa City
Randall, Ross G., Waterloo
Randall, William L., Hampton
Rankin, Isom A., Iowa City
Rankin, John R., Keokuk
Rankin, William, Keokuk
Ransom, Harry E., Des Moines
Rater, David L., Ottumwa
Rathe, Herbert W., Waverly
Rausch, Gerald R., Sioux City
Readinger, Harry M., New London
Redmond, James J., Cedar Rapids
Redmond, Thomas M., Monticello
Reed, Andrew I., Estherville
Reed, Guy P., Davis City (L.M.)
Reed, Paul A., Iowa City (L.M.)
Reed, Purl E., Council Bluffs
Reed, Robert J., Des Moines
Reeder, James E., Sioux City
Reeder, James E., Jr., Sioux City
Reedholm, Edwin A., Grundy Center
Reimers, Robert S., Fort Madison
Reinecke, Edward L., Dubuque (L.M.)
Reinsch, Frank, Ashton
Rembolt, Raymond R., Iowa City
Rence, William G., Sigourney
Render, Norman D., Clarinda
Reuber, Roy N., Mason City
Reuling, Frank H., Waterloo
★ Reynolds, Albert C., Des Moines
(L.M.)
Rhode, Marvin C., Iowa City
Rhodes, John M., Pocahontas
Rice, Floyd W., Des Moines
Richardson, Leon F., Collins (L.M.)
Richey, Granville L., Centerville
Richmond, Arthur C., Fort Madison
Richmond, Frank R., Fort Madison
Richmond, Paul C., New Hampton
Richter, Harold J., Albia
Ridenour, Joseph E., Waterloo (L.M.)
Rider, Harmon E., Sioux City
Riegelman, Ralph H., Des Moines
Rieniets, John H., Cedar Rapids
Riggert, Leonard O., Clinton
Rimel, George W., Bedford
Rindskopf, Wallace, Des Moines
Ringena, Engelke J., Brooklyn
Rinker, George E., Oto
Ritter, Eugene F., Centerville
Rives, Hugh F., Dubuque
Rizzo, Frank M., Sibley
Robb, James B., Chariton
Robb, Robert W., Independence
Robb, William J., Cedar Rapids
Roberts, C. Ronald, Dysart
Roberts, Justus B., Ottumwa
Robertson, Treadwell A., West Liberty
Robinson, George L., Waterloo
Robinson, Robert E., Waverly (L.M.)
Robinson, Van C., Des Moines
Rock, John E., Davenport
Rock, J. Gordon, Davenport
Rock, Joseph H., Davenport
Rockwell, Maryelda, Clinton
Rodawig, Don F., Spirit Lake
Roddy, Harold J., Mason City
Rodemeyer, Frederick H., Sheffield
Rodgers, Lewis A., Oskaloosa (L.M.)

- Roe, Cullen B., Afton
 Rogers, Claude B., Earlville (L.M.)
 Rohlf, Edward L., Jr., Waterloo
 Rohrbacher, William M., Iowa City
 Rohwer, Roland T., Sioux City
 Rolfs, Floyd O., Parkersburg
 Rolfs, Fred A., Aplington
 Romine, John H., Webster City
 Rominger, Clark R., Waukon
 Rominger, Clark W., Waukon
 Rose, Alvin A., Story City
 Rose, Joseph E., Grundy Center
 Rosebrook, Lee E., Ames
 Rosendorff, Charlotte, Bettendorf
 Ross, Arthur J. Jr., Perry
 Rost, Glenn S., Lake City
 Rotkow, Maurice J., Des Moines
 Rowat, Harry L., Des Moines (L.M.)
 Rowe, John J., Cedar Falls
 Rowley, Robert D., Burlington
 Rowley, William G., Sioux City
 Royal, Lester A., West Liberty
 Royal, Malcolm A., Des Moines
 ★Ruble, Robert L., Nevada
 Rudersdorf, Howard E., Sioux City
 Rugt, George M., Des Moines
 Ruml, Wentzle, Cedar Rapids (L.M.)
 Rusk, Ross P., Dubuque
 Russ, Jesse E., Rake
 Russell, Elwood P., Burlington
 Russell, Ralph E., Waterloo
 Rust, Emery A., Webb
 Ruth, Verl A., Des Moines
 Ruzicka, Lawrence J., Iowa City
 Ryan, Allen, J., Harlan
 Ryan, Charles M., Sioux City
 Ryan, Cyril J., Creston
 Ryan, Granville N., Des Moines (L.M.)
 Ryan, Martin J., Sioux City
 Ryan, Robert A., Fairfield
- Saar, Jesse L., Donnellson
 Saar, Jesse L., Jr., Burlington
 Saar, John W., Keokuk
 Sahs, Adolph L., Iowa City
 St. Onge, Joseph A., Sioux City
 Samberg, Harry H., Des Moines
 Sampson, Carl E., Creston
 Sampson, Frank E., Creston (L.M.)
 Sams, Joseph H., Clarion (L.M.)
 Sanders, George E., Des Moines (L.M.)
 Sanders, Matthew G., Fort Dodge
 Sanders, William E., Long Beach, Calif. (L.M.)
 Sands, Sidney L., Des Moines
 Sarff, Floyd G., Logan
 Sartor, Guido J., Mason City
 Sartor, Pierre, Titonka
 Sattler, Dwight G., Kalona
 Sauer, Harold E., Marshalltown
 Saunders, Robert J., Colfax
 Sawyer, Grace M., Woodward
 Sawyer, Prince E., Sioux City (L.M.)
 Sayre, Ivan K., St. Charles
 Scales, E. Thomas, Des Moines
 Scanlan, George C., Omaha, Nebr. (L.M.)
 *Scanlan, Maurice, DeWitt
 Scanlon, George H., Iowa City
 Schaefer, Paul H., Champaign, Ill. (L.M.)
 Schaeferle, Lawrence G., Gladbrook
 Schaeferle, Martin J., Eagle Grove
 Schafer, Leander H., DeWitt
 Schanche, Arthur N., Ames
 Scharle, Theodore, Dubuque
 Scharnweber, Henry C., Boone
 Scheffel, Melvin L., Malvern
 Scheldrup, Eugene W., Iowa City
 Schenk, Erwin, Des Moines (L.M.)
 Schiff, Joseph, Walla Walla, Wash.
 Schill, Austin E., Des Moines
 Schilling, Erwin A., Iowa City
 Schissel, Donald, Des Moines
 Schlaser, Verne L., Des Moines
 Schlichtemeier, Ellis O., Peterson
 Schmitz, Henry C., Des Moines
 Schnug, George E., Dows
 Schoonover, Richard, Bloomfield
 Schrier, Harold L., Fayette
 Schrock, Christian E., Waverly
 Schroeder, Adrian J., Marshalltown
 Schroeder, Frank N., Ryan
 Schroeder, Leslie V., Walcott
 Schropp, Rutledge C., Des Moines
 Schrup, Joseph H., Dubuque (L.M.)
 Schueller, Charles J., Dubuque
 Schultz, Albert A., Fort Dodge
 Schultz, Ivan T., Humboldt
 ★Schultz, Marvin H., Waterloo
 Schultz, Nelle E., Humboldt
 Schultz, Walter H., Schleswig
- Schutter, John M., Algona
 Schwartz, John W., Sioux City
 Schwidde, Jess T., Iowa City
 Scott, Phil A., Spirit Lake
 Scott, Sophie H., Des Moines (L.M.)
 Seaman, Charles L., Cherokee
 Sedlacek, Leo B., Cedar Rapids
 Seeborn, Paul M., Iowa City
 Seely, Harmon D., Cherokee
 Seibert, Cecil W., Waterloo
 Seidler, William A., Jamaica (L.M.)
 Seidler, William A., Jr., Jamaica
 Seiler, Raymond A., Blainstown
 Sellards, Joseph W., Clarinda (L.M.)
 Sellers, Harry W., Ottumwa
 Sells, Benjamin B., Independence
 Selman, Ralph J., Ottumwa
 Selo, Rudolph A., Mission, Kan.
 Senska, Frank R., Brandon
 Senty, Elmer G., Davenport
 Severson, George J., Slater
 Severson, Wayne L., Slater
 Shafer, Arthur W., Davenport
 Shafer, Lee E., Davenport
 Shaffer, Frank J., Iowa City
 Shane, Robert S., Pilot Mound
 Shannon, Edwin R., Waterloo (L.M.)
 Sharpe, Donald C., Dubuque
 Shaw, Albert E., Des Moines
 Shaw, David F., Britt
 Shaw, Robert E., Waverly
 Shea, Thomas E., Storm Lake
 Sheeler, Ivan H., Des Moines
 Sheets, Raymond F., Iowa City
 Shelton, Charles D., Bloomfield (L.M.)
 Shepherd, Loyd K., Des Moines
 Sherman, Richard C., Farley
 Shiffer, H. Kirby, Des Moines
 Shine, Dan W., Oelwein
 Shonka, Thomas E., Malvern
 Shope, Charles D., Greenfield
 Shorey, Joseph R., Davenport
 Shrader, John C., Fort Dodge
 Shulkin, Sam H., Sioux City
 Shulman, Herbert, Waterloo
 Shurts, John J., Eldora
 Siberts, Frank L., Hampton
 Sibley, Edward H., Sioux City
 Sievers, Claudius L., Denison
 Sigworth, Frederick B., Anamosa (L.M.)
 Simmons, Joseph R., Hooper, Nebr.
 Simmons, Ralph R., Des Moines
 Simons, James D., Leon
 ★Simonsen, Marie N., Sioux City
 Sindelar, Joseph B., Baltimore, Md.
 Singer, John R., Newton
 Singer, Siegmund F., Ottumwa
 Sinn, Irvin J., Williamsburg
 Sinning, Augustus, Iowa City (L.M.)
 Sinning, John E., Marshalltown
 Skaggs, Joseph T., Des Moines
 Skallerup, Glenn M., Iowa City
 Skelley, Paul B., Jr., Dubuque
 Skultety, James A., Des Moines
 Sloan, Fred R., Waterloo
 Smazal, Stanley F., Davenport
 Smead, Howard H., Des Moines
 Smead, Leslie L., Newton
 Smiley, Ralph E., Mason City
 Smith, Anthony P., Waucoma
 Smith, Arthur F., Manning
 Smith, Cecil R., Wyoming
 Smith, Channing G., Granger
 ★Smith, Charles B., Iowa City
 Smith, Elizabeth J., Seattle, Wash.
 Smith, Elmer M., Eagle Grove
 Smith, Eugene E., Waterloo
 Smith, Franklin C., Mount Airy (L.M.)
 Smith, Harold F., Iowa City
 Smith, Herman J., Des Moines
 Smith, Homer A., Correctionville
 Smith, Howard W., Woodward
 Smith, Jason N., Iowa City
 Smith, John E., Clarence (L.M.)
 Smith, Lawrence D., Des Moines
 Smith, Rex I., Waterloo
 Smith, Robert A., Albia
 Smith, Robert T., Granger
 Smith, Rodger B., Mason City
 Smith, Sidney D., Waterloo
 Smouse, William O., Biloxi, Miss. (L.M.)
 Smrha, James A., Cedar Rapids
 Smyth, William T., Iowa City
 Smythe, Arnold M., Des Moines
 Sneed, William R., Jr., Iowa City
 Snook, Lee O., Jr., Wesley
 Snyder, Dean C., DeWitt
 Snyder, John A., Roland
 Snyder, Raleigh R., Des Moines
 Sohm, Herbert A., Des Moines
- Sokol, Charles R., State Center
 Solis, Delmar B., Chariton
 Somers, Pearl E., Tullahoma, Tenn. (L.M.)
 Sones, Clement A., Des Moines
 Sorensen, Elmer M., Red Oak
 Sorenson, Aral C., Davenport
 Sorenson, Kermit R., Sabula
 Sorenson, Philip W., Cedar Falls
 Southwick, William W., Marshalltown
 Spain, Robert T., Conrad (L.M.)
 Sparks, Francis R., Waverly (L.M.)
 Spear, William, Oakdale
 Spearing, Joseph H., Harlan
 Speidel, Glenn P., Hartford, Conn.
 Spellman, George G., Sioux City
 Spellman, Martin T., Cedar Rapids
 Spencer, Philip L., Essex
 Spencer, William A., Osage
 Sperow, Wendell B., Nevada
 Sperry, Frederick S., Clarinda
 Spevak, Jack, Des Moines
 Spielhagen, Guenther F., Iowa City
 Spillman, Harold A., Ottumwa
 Spohnheimer, L. Nelson, Donnellson
 Springer, Floyd A., Des Moines
 Sproul, William M., Des Moines
 Stalford, John H., Sac City (L.M.)
 Stam, Nicholas C., Mason City
 Stamler, Frederic W., Iowa City
 Standefer, Joe M., Des Moines
 Standeven, James W., Oakland
 Stansbury, John E., Cedar Rapids
 Stark, Callistus H., Cedar Rapids
 Stark, Frederick M., Sioux City
 Starr, Charles F., Mason City (L.M.)
 Starry, Allen C., Sioux City
 Stauch, Omar A., Sioux City
 Staudt, Alfred J., Waterloo
 Steele, William L., Cedar Rapids
 Steenrod, Emerson J., Iowa Falls
 Steffens, Lincoln F., Dubuque
 Steffy, Fred L., Keokuk
 Stegmaier, Otto C., Davenport
 Stegman, Jacob J., Marshalltown
 Steindler, Arthur, Iowa City
 Stephen, Paul, Manchester
 Stephen, Raymond J., Cedar Rapids
 Stepp, James K., Manchester
 Sternagel, Fred, West Des Moines
 Sternberg, Walter A., Mount Pleasant (L.M.)
 Sternhill, Irving, Mason City
 Sternhill, Isaac, Council Bluffs
 Stevens, Clark W., Dubuque
 Stevenson, Eber F., Waterloo (L.M.)
 Steves, Richard J., Des Moines
 Stewart, John H., Ottumwa
 Stewart, John K., Clinton
 Stewart, William L., Mediapolis
 Stickler, Robert B., Des Moines
 Stimac, Emil M., Princeton
 Stinson, Alice C., Estherville (L.M.)
 Stitt, Paul L., Fort Dodge
 Stoakes, Charles S., Lime Springs
 Stober, Raymond W., Charles City
 Stolley, J. George, Moline
 Stolley, Robert J., New London
 ★Storck, Robert D., Dubuque
 Straub, Joseph J., Sioux City
 Strawn, John T., Des Moines
 Stribley, Harry A., Dubuque
 Stroy, Herbert E., Osceola
 Stryker, Henry B., Dubuque
 Stuart, Percy E., Nashua (L.M.)
 Stueland, Alvin J. R., Mason City
 Stumme, Ernest H., Denver
 Stutsman, Eli E., Washington
 ★Stutsman, Robert E., Washington
 Suchomel, Thomas F., Cedar Rapids
 Sugg, Herbert R., Clinton (L.M.)
 Sullivan, John J., DeWitt
 Sullivan, Lawrence F., Donahue
 Sulzbach, John F., Burlington
 Summers, Thomas B., Iowa City
 Sunderbruch, John H., Davenport
 Svehla, Richard B., Des Moines
 Svendsen, Reinert N., Decorah
 Swallum, James A., Storm Lake
 Swanson, Gerald W., Lamoni
 Swanson, Leslie W., Mason City
 Swayze, V. Warren, Muscatine
 Sweeney, Lloyd J., Sanborn
 Swift, Frederick J., Jr., Maquoketa
 Swinney, Roy G., Richland
 Sybenga, Jacob J., Pella
 Synhorst, John B., Des Moines
 Sywassink, George A., Muscatine
- Taber, Rodman E., Iowa City
 Tait, John H., Des Moines
 Talley, Louis F., Marshalltown

- Tamisea, Francis X., Missouri Valley
Taylor, Charles B., Upland, Calif (L.M.)
Taylor, Edward D., Bettendorf (L.M.)
★Taylor, Harold N., Iowa City
Taylor, James H., Des Moines
Taylor, Lawrence A., Ottumwa
Taylor, Maude, Ottumwa
Taylor, Robert S., Davenport
Taylor, Wendel W., Sheffield
★Tempel, Paul F., Steamboat Rock
Teufel, John C., Davenport
Thaler, David, Cedar Rapids
Thatcher, Wilbur C., Fort Dodge
Theilen, Ernest O., Iowa City
Thein, Garfield M., Oelwein
Theisen, Roy I., Dubuque
Thielen, Edward W., Waterloo
Thielen, John B., Fonda
Thistlewaite, Edward A., Des Moines
Thomas, Clifford W., Mason City
Thomas, Clyde E., Keystone
Thomas, Colin G., Monticello
Thomas, Colin G., Jr., Iowa City
★Thomas, James H., Jr., Sibley
Thomas, William H., McGregor
Thompson, Elvin D., Jefferson
Thompson, Howard E., Dubuque
Thompson, James R., Waterloo
Thompson, James W., Ames
Thompson, Kenneth L., Oakland
Thompson, Virginia D., Des Moines
Thomsen, Thomas F., Red Oak
Thorburn, Oral L., Ames
Thornburg, William V., Guthrie Center (L.M.)
Thornton, F. Eberle, Des Moines
Thornton, Thomas F., Waterloo
Thornton, Thomas F., Jr., Waterloo
Thorsness, Edwin T., Dubuque
Thorson, John A., Dubuque
Throckmorton, J. Fred, Des Moines
Throckmorton, Jeannette Dean, Des Moines (L.M.)
Throckmorton, Robert F., Des Moines (L.M.)
Throckmorton, Scott L., Chariton
Throckmorton, Tom B., Des Moines
Throckmorton, Tom D., Des Moines
Tice, Claude B., Mason City (L.M.)
Tice, George I., Mason City
★Tice, Wayne K., Iowa City
Tidrick, Robert T., Iowa City
Tiedeman, John P., Sioux City
Tierney, Edmund J., Sioux City
Tierney, James M., Carroll
Tilton, John J., Bellevue
Tinley, Mary L., Council Bluffs (L.M.)
Tinley, Mathew A., Council Bluffs
Todd, Donald W., Guthrie Center
Tolliver, Hillard A., Charles City
Toubes, Abraham A., Des Moines
TouVelle, Alwyn R., Bettendorf.
Towle, Robert A., Davenport
Tracy, John S., Sioux City
Trafton, Harold F., Council Bluffs
Traister, John E., Eddyville
Trey, Bernard L., Marshalltown
Treyner, Jack V., Council Bluffs
Trimbo, Joseph O., Chelsea (L.M.)
Troxell, Millard A., Minneapolis, Minn.
Trueblood, Clare A., Indianola
Trunnell, Thomas L., Waterloo
Turner, Howard V., Des Moines
Turner, Lee R., Renwick
Turner, Rosalie C., Nashua
Turner, William R., Fort Dodge
★Tyler, Donald E., Shenandoah
Tyrell, Joseph W., Des Moines (L.M.)
Uchiyama, John K., Des Moines
Unger, David, Des Moines
Updegraff, Charles L., Boone
Updegraff, Thomas R., Waterloo
Valiquette, Frank G., Sioux City
Van Allen, Maurice W., Davenport
Van Camp, Thomas H., Breda
Vander Meulen, Herman C., Pella
Vander Stoep, Harry L., Le Mars
Vander Veer, Frank L., Janesville (L.M.)
Van Epps, Clarence E., Iowa City (L.M.)
Van Epps, Eugene F., Iowa City
Vangness, Ingmar C., Sioux City
Van Metre, Paul W., Rockwell City
Van Patten, Ernest M., Fort Dodge
Van Tiger, William H., Eldora
Van Werden, Benjamin D., Keokuk
Van Zante, Peter, Pella
Vaubel, Ellis K., Estherville
Vaubel, Rex O., Iowa City
Veldhouse, Richard H., Cedar Rapids
Veltman, John F., Winterset
Vermeer, Gerritt E., Sheldon
Victorine, Edward M., Cedar Rapids
★Vincent, Jack F., Fort Dodge
Viner, Thomas R., Leon
Vineyard, Thomas L., Ottumwa
Voelker, Chris A., Iowa City
Voigt, Ernest J., Burlington
Voigt, Franz O. W., Oskaloosa
von Lackum, J. Kenneth, Cedar Rapids
★von Lackum, LeRoy F., Oelwein
Voorhees, Philip H., Ottumwa
Vorpahl, Rudolph A., Cedar Rapids
Voss, Otto R., Davenport
Votteler, Robert E., Iowa City
*Waddell, Jesse C., Paton
Wadsworth, George L., Woodworth
Waggoner, Charles V., Clinton
Wagner, Donald J., Sioux City
Wagner, Eugene C., Plainfield
Wagner, James A., Pringhar
Wahrer, Frederick L., Marshalltown
Wainwright, Maxwell T., Sioux City
★Waldmann, Edward B., Council Bluffs
Walker, Charles C., Des Moines
Walker, Glenn L., Iowa City
Walker, Harry L., Cedar Rapids (L.M.)
Walker, Herbert P., Clarion
Walker, John R., Waterloo
Walker, Thomas G., Riceville
Walker, Thomas S., Riceville (L.M.)
Wall, David, Ames
Wall, John M., Boone
Walliker, Wilbur M., Clinton
Walsh, Eugene L., Huntington, W. Va.
Walston, Edwin B., Des Moines (L.M.)
Walston, James H., Graettinger
Walton, Seth G., Hampton
★Walz, Donald V., Le Mars
Wanamaker, Ambrose E., Hamburg (L.M.)
Wanamaker, Ambrose R., Hamburg
Ward, Donovan F., Dubuque
Ward, Thomas L., Arnolds Park
Ware, Stephen C., Iowa City
Warner, Emory D., Iowa City
Warren, Elbert T., Stuart
Waterbury, Charles A., Jr., Waterloo
Watson, Charles F., Stacyville
Watson, Elbert J., Diagonal (L.M.)
Watters, George H., Des Moines
Watters, Phillip G., Des Moines
Watts, A. Fred, Creston
Watts, Campbell F., Cedar Rapids
Watts, Clyde F., Marengo
Weaver, David F., Davenport
Weaver, Kenneth H., Union
Weaver, Ralph L., Cumberland
Webb, Daniel R., Oakdale
Weber, Frank N., Walnut
Weber, William W., Pomeroy
Weeks, Vernon L., Des Moines
Weems, Nev E., Paullina
Wehman, Edward J., Burlington
Weihs, Elmer P., Clinton
Weinberg, Harry B., Davenport
Weingart, Julius S., Des Moines
Weir, Edward C., Council Bluffs
Weir, Matt B., Atlantic
Weis, Howard A., Davenport
Weland, Regis E., Cedar Rapids
Wells, Fred L., Des Moines (L.M.)
Wells, Rodney C., Marshalltown
Wendell, Margaret R., Pella
Wentworth, Laydon S., Marble Rock
Wentzien, Albert J., Tama
Werner, Harold T., Fort Madison
West, Alroy G., Council Bluffs
West, Harry D., Des Moines
West, Norman D., Avoca
West, Walter E., Centerville
Westly, Gabriel S., Manly
Westly, G. Travis, Des Moines
Westly, J. Stephen, Manly
Weston, B. Raymond, Mason City
Weston, Robert A., Des Moines
Wetrich, Max F., Grand Junction
Weyer, Joseph J., Fort Dodge
★Wheeler, Richard A., Des Moines
Whitaker, Ben T., Boone
White, George H., Des Moines
White, Harold E., Knoxville
White, Joseph M., Jr., Iowa City
White, Paul A., Davenport
Whitehill, Nelson M., Boone
Whitehouse, William N., Ottumwa
Whitley, Ralph L., Osage (L.M.)
Whitmer, Lysle H., Muscatine
Whitmire, James E., Sumner
Whitmire, William L., Sumner (L.M.)
Wichern, Homer E., Des Moines
Wicklund, Maurice M., Waterloo
Wicks, Ralph L., Boone
Widmer, James G., Wayland
Widmer, Reuben B., Winfield
Wiedemeier, Joseph L., Sioux City
Wilcox, Delano, Malcom (L.M.)
Wilcox, Edgar B., Oskaloosa
Wilcox, Keith E., Muscatine
Wilcox, Robert A., Iowa City
Wildberger, William C., Perry
Wiley, Eugene D., Sioux City
Wiley, Ralph E., Fontanelle
Wilke, Frank A., Perry
Wilkinson, George W., Burlington
Wilkinson, Levi J., Laurel
Willett, Wilton J., Manchester
Williams, Benjamin G., Oskaloosa (L.M.)
Williams, Edward B., Montezuma (L.M.)
Williams, Frank S., Villisca (L.M.)
Williams, Nathan B., Belle Plaine
Williams, Robert L., Lakota
Wilson, Charles R., Manson
Wilson, F. Dale, Davenport
Wilson, Fredric L., Sioux City
Wilson, Fredric W., Sioux City
Winder, Clifford D., Waterloo
Winninger, Louis T., Waterloo
Winter, F. Donald, Omaha, Nebr.
Winter, Louis C., Wilton Junction (L.M.)
Wirsig, Arnold O., Shenandoah
Wirtz, Dwight C., Des Moines
Wise, Arthur C., Oakdale
Wise, James H., Cherokee
Witte, Max E., Independence
Wittmer, Samuel C., Des Moines
Wolcott, Ruth F., Spirit Lake
Wolcott, W. Eugene, Des Moines (L.M.)
Wolf, Henry H., Elgin
Wolfe, Joseph H., Iowa City
Wolfe, Otis D., Marshalltown
Wolfe, Otis R., Marshalltown
Wolfe, Russell M., Marshalltown
Wolfe, Wilson C., Ottumwa
Wolfson, Harold, Kingsley
Wolpert, Paul L., Onawa
Wolverton, Benjamin F., Cedar Rapids
Womack, Nathan A., Iowa City
Wood, George O., Dubuque
Wood, John R., Wadena
Wood, Rollin W., Des Moines
Woodard, Floyd O., Des Moines
Woodbridge, James W., Emmetsburg (L.M.)
Woodhouse, Keith W., Cedar Rapids
Woods, Andrew H., Iowa City (L.M.)
Woods, Arthur D., State Center
Woods, Hugh B., Des Moines
Woodward, Lee R., Mason City
Woolf, Robert M., Iowa City
★Woolfolk, Jesse H., II, Waterloo
★Woolfolk, Jesse H., II, Waterloo
Workman, Robert D., Ruthven
*Worley, Charles L., Ottumwa
Worrell, James T., Keosauqua
Wray, Robert M., Cedar Rapids
Wright, Thomas D., Newton
Wright, Walter N., Rose Hill (L.M.)
Wubben, Arthur C., Rock Rapids
Wunschel, Richard C., Davenport
Wurtzer, Ezra L., Clear Lake
Wykoff, Sarah U., Des Moines
Wyland, Asa O., Underwood (L.M.)
Wynegar, David E., Cherokee
Yancey, Charles C., Sioux City
Yavorsky, George W., Belle Plaine (L.M.)
Yetter, William L., Iowa City
Yocom, Albert L., Jr., Chariton
Young, Ernest R., Dubuque
Young, George G., Des Moines
Young, Henry C., Bloomfield (L.M.)
Young, Howard O., Marion
Young, James J., Clinton
Young, Richard A., Clarion
Yugend, Sidney F., Indianola
Zabloudil, Warren C., Preston
Zager, Lewis L., Waterloo
★Zellenga, Robert H., Orange City
Ziffren, Sidney E., Iowa City
Zimmerer, Edmund G., Des Moines
Zoller, Sherwood B., Fredericksburg
Zuercher, Arlo R., Cedar Rapids
Zukerman, Cecil M., Davenport
★Military Service
*Deceased
(L.M.) Life Member

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. HOWARD W. SMITH, Woodward

President-Elect—MRS. J. DONALD HENNESSY, 205 Frank St., Council Bluffs

Secretary—MRS. CHARLES F. LOWRY, 246 Lincoln, Council Bluffs

Treasurer—MRS. DWIGHT C. WIRTZ, 449-56th St., Des Moines

1951-1952 PRESIDENT'S ADDRESS

It is indeed an honor and a privilege to serve as President of the Women's Auxiliary to the Iowa State Medical Society. I feel both grateful and humble. I fully realize the great responsibility that comes with this high honor. It is an opportunity for me to grow and develop. Recently I read in the *National Bulletin* these words, "She who dares to lead must never cease to learn." I certainly realize that there is a great deal for me to learn. With the cooperation, guidance and assistance of the officers, committee members and each and every member of our Auxiliary I have faith that together we can make this year a successful one for each county auxiliary in Iowa.

It is the successful activities of our county auxiliaries that make for a strong State and National Auxiliary. The county auxiliaries really are the State Auxiliary. Again this year, as we have done in the past we all want to work to develop an alert and informed membership. A well-informed Auxiliary membership is one of the greatest assets the medical profession has.

The following questions are helpful in taking an inventory of where we stand at the present time:

1. What about Constitution—Is each county auxiliary up to date?

2. What about programs—Are we planning them to develop an alert informed membership? The program committee last year provided excellent program material from which to build fine constructive programs. Are you using these materials?

3. Have you an advisor or advisory committee from the county medical society where by your auxiliary and this committee can work together?

We need to concentrate our energy and ability as leaders in the community especially through the following channels:

1. Be prepared to aid in the dissemination of authentic health information by selling *Today's Health*, the only lay journal published by the American Medical Association.

2. Student Nurse recruitment is still an important project. The medical profession, nurses and hospitals all encourage our aid in this activity. There is a need for a larger Nurses Loan Fund, not only to help student nurses but to assist graduate nurses who wish to take post gradu-

ate work. There is an acute shortage of nurse instructors and public health nurses.

3. The sale of handicraft by the handicapped people of Iowa is a fine project. Blackhawk, Dubuque, Polk and Woodbury County Auxiliaries have conducted successful sales. This service is unique in that all of the articles sold are made by severely handicapped adults who are residents of Iowa. Many of these individuals would never have an opportunity to market their handiwork without such sponsorship.

4. The Jefferson County Medical Auxiliary has provided transportation for the crippled and handicapped patients whenever clinics are held in their county.

5. Whenever an opportunity presents itself we can help people learn about the Blue Shield-Blue Cross voluntary health plans.

I am sure many of you are serving in one way or another in the several health organizations in your county or community. These are all important and I believe that if you are a member of your county medical auxiliary you can increase the value of your services because you will be better informed and in closer cooperation with your county medical society. You will be rendering "Public Service Through Health Education." This was the conference theme at the seventh annual conference of State Presidents, Presidents-elect and National Chairmen held in Chicago last November.

I recommend that you read Dr. Austin Smith's article in the March, 1951 *National Bulletin*, part of which I quote.

"When health programs are proposed for all by the medical profession and when health activities in the community must be encouraged, the members of the Woman's Auxiliary without hesitation, figuratively speaking roll up their sleeves and start to work. Most citizens, especially those interested in community affairs, recognize the force of women's groups. DO THE WOMEN, HOWEVER, ALWAYS REALIZE WHAT THEY CAN DO AND HOW MUCH THEIR WORK IS TRULY APPRECIATED? The Woman's Auxiliary obviously works closely with the medical societies. It is informed and it informs. But does it always remember what it can do INDIVIDUALLY WITH HUSBANDS rather than with the societies to which the husbands belong? For example, untold help is provided by local auxiliary groups disseminating health information to other groups, establishing liaison between professions and these groups, prodding local organizations to solve their community problems and

in many other ways. Why not reverse at times, the flow of information so that a two-way street is established? Why not to be specific, take information received from nonprofessional groups back to the medical profession? Why not bring to the local medical groups hints of health problems that the groups may not have heard of or, in their rush of other business, may have overlooked? And most important why not discuss these individually with the physician husband?"

We still have a great deal to do on organization. With the recent addition of councilors in our state organization, provision for them was made in the by-laws accepted at the last state meeting, we hope to greatly accelerate our organization program. With a councilor in each of the eleven districts we hope to give more assistance to the individual county auxiliary and to organize new auxiliaries. We hope to work more closely with the county medical societies where there are no auxiliaries. If we can get the medical councilors to say a few words to the doctors they contact about the value of having an auxiliary in their county, I am sure good results will follow. Each doctor's wife who is a member can do a good selling job to her own husband and other doctors she is acquainted with.

With the addition of our councilors we have the task of fitting them into our state administration setup—and to try out ways they can be used effectively. There always is a challenge in developing new ways of work.

One of the huge tasks is the correlation of our efforts so that everything we do counts. Everyone is busy and it is important that we get a clear cut idea of how to correlate. The district councilors can serve a real purpose in the correlation of our objectives of the county and the state auxiliary.

Events of the past few weeks clearly show us that the people are interested in their country and what our leaders are doing. Public opinion is always at work. Are we doing our part in shaping public opinion to help the people ask for the fine medical care that is available to them in a free America?

Your new officers will earnestly endeavor to maintain the fine service your previous leaders have so faithfully give you.

MRS. HOWARD W. SMITH, *President*

COUNCILOR MEETING

A councilor meeting was held May 22 at the Savory Hotel in Des Moines. The President, President-elect, immediate Past President, Organization Chairman, seven of the eleven councilors and Dr. R. D. Bernard, one of the Auxiliary's staunchest supporters, were present.

This meeting was held primarily so that Mrs. George Crow, First Vice-President and Organization Chairman could discuss with her councilors the best ways of organizing new county auxiliaries and stimulating organized counties.

It was suggested that councilors visit one meeting in each organized county, not as a speaker,

but to advise and help them in any way possible with their programs and projects. It was recommended that each county officer subscribe to *The Bulletin* and to suggest that other members do so, too. This publication presents a broader view of the entire scope of Auxiliary aims and functions than can otherwise be visualized.

In organizing new auxiliaries, it was suggested that councilors contact the doctor councilor or deputy in their district for suggestions in their organization efforts. Contact the Doctor's wife suggested and then get permission from the county medical society to organize. Councilors should be present at the first meeting of new auxiliaries. Uninterested doctor's wives should not be organized. It was suggested that each organized county auxiliary invite a state officer to one of their meetings this year for further correlation and coordination of Auxiliary projects.

MRS. J. DONALD HENNESSY, *President-Elect*.

CHAIRMEN OF STANDING COMMITTEES

Archives	Mrs. Fred Moore 634 40th St. Des Moines
Finance	Mrs. William B. Chase, Jr. 690 63rd St. Des Moines
Historian	Mrs. John F. Veltman 303 W. Felmore St. Winterset
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Today's Health	Mrs. Richardson E. Clark Manchester
Work for the Handicapped	Mrs. Joseph W. Lawrence 115 Fremont Avenue Dubuque
Year Book	Mrs. Clair H. Mitchell 200 W. Ashland Indianola

STATE DEPARTMENT OF HEALTH

Walter Diering

IOWA HOSPITAL CONSTRUCTION PROGRAM

The following data presents a summary of the present status of the Iowa Hospital Construction Program. To date Federal Grants-in-Aid assistance has been given to 38 hospital projects. The projects listed as 100 per cent complete are presently open and receiving patients. However, due to the slow delivery of equipment, final payment and termination of aid agreements has been made

on four projects, namely Greenfield, Winterset, Maquoketa and Red Oak.

These 38 projects represent a total expenditure in excess of \$23,046,732.10, one third of which was contributed by the Federal Government through the Iowa State Department of Health under the provisions of Public Law 725. This expenditure covers the cost of constructing and equipping 1,587 new hospital beds, or an average cost of \$14,522.20 per bed.

Project	Beds	Cost	Floor Area	% Complete
Bloomfield Davis County Hospital General	34	\$499,941.94 Complete 14,700.00/bed	24,020 sq. ft. Total 706 sq. ft./bed	100% complete
Keosauqua Van Buren Co. Mem. Hosp. Mat. & Emerg.	23	\$275,985.97 Complete 12,000.00/bed	12,039 sq. ft. total 523 sq. ft./bed	100% complete
Greenfield Adair Co. Mem. Hosp. Mat. & Emerg.	29	\$380,284.68 Complete 13,113.00/bed	22,264 sq. ft. total 768 sq. ft./bed	100% complete
Winterset Madison Co. Mem. Hosp. General	39	\$529,062.44 Complete 13,565.00/bed	20,113 sq. ft. total 516 sq. ft./bed	100% complete
Manchester Delaware Co. Mem. Hosp. General	39	\$372,073.76 Complete 9,540.00/bed	19,407 sq. ft. total 498 sq. ft./bed	100% complete
Waukon Veterans' Mem. Hosp. General	22	\$276,019.27 Complete 12,546.00/bed	13,155 sq. ft. total 598 sq. ft./bed	100% complete
Maquoketa Jackson Co. Public Hosp. General	34	\$530,352.00 Complete 15,600.00/bed	26,388 sq. ft. total 776 sq. ft./bed	100% complete
Fairfield Jefferson Co. Hospital General	25 Add.	\$573,119.50 Complete 11,462.00/bed	29,713 sq. ft. total 594 sq. ft./bed	100% complete
Mount Ayr Ringgold County Hospital General	30	\$343,065.00 Complete 11,435.00/bed	17,518 sq. ft. total 584 sq. ft./bed	100% complete
Denison Crawford Co. Mem. Hosp. General	50	\$546,512.59 Complete 10,930.00/bed	27,800 sq. ft. total 556 sq. ft./bed	99% complete
Storm Lake Buena Vista Co. Hosp. General	50	\$518,155.96 Complete 10,363.00/bed	27,400 sq. ft. total 548 sq. ft./bed	99% complete
Sac City Loring Hospital General	32	\$307,000.00 Complete 9,594.00/bed	15,888 sq. ft. total 497 sq. ft./bed	100% complete
West Union Palmer Memorial Hosp. Mat. & Emerg.	20	\$242,199.51 Complete 12,110.00/bed	10,869 sq. ft. total 543 sq. ft./bed	100% complete
Red Oak Murphy Memorial Hosp. General	17 Add.	\$189,774.00 Complete 11,163.00/bed	11,390 sq. ft. total 670 sq. ft./bed	100% complete
Corning Rosary Hospital General	38	\$565,050.80 Complete 14,870.00/bed	27,170 sq. ft. total 715 sq. ft./bed	100% complete
Cherokee Sioux Valley Hospital General	42 Add.	\$443,244.00 Complete	23,800 sq. ft. total 566 sq. ft./bed	98% complete

Project	Beds	Cost	Floor Area	% Complete
Des Moines Iowa Meth. Hosp. (Psychiatric Unit) General	24 Add.	\$1,692,836.67 Complete	60,970 sq. ft. total	55% complete
Ottumwa Ottumwa General Hosp. General	133	\$1,804,279.50 Complete 13,566.01/bed	95,287 sq. ft. total 716 sq. ft./bed	60% complete
Guthrie Center Guthrie Co. Hospital General	33	\$388,676.08 Complete 10,228.31/bed	21,200 sq. ft. total 706 sq. ft./bed	80% complete
Grundy Center Grundy County Hosp. General	41	\$467,097.88 Complete 11,390.04/bed	27,033 sq. ft. total 659 sq. ft./bed	55% complete
Clarion Community Mem. Hosp. General	22	\$282,210.00 Complete 12,827.00/bed	16,784 sq. ft. total 763 sq. ft./bed	50% complete
Sioux Center Sioux Center Comm. Hosp. General	26	\$287,850.00 Complete 10,661.00/bed	14,460 sq. ft. total 536 sq. ft./bed	93% complete
Spencer Spencer Municipal Hosp. General	47 Add.	\$734,590.35 Complete	26,198 sq. ft. total 557 sq. ft./bed	5% complete
Sheldon Community Mem. Hosp. General	24	\$339,137.47 Complete 13,935.21/bed	15,975 sq. ft. total 666 sq. ft./bed	35% complete
Council Bluffs Edmundson Mem. Hosp. General	56 Add.	\$454,935.00 Complete	14,300 sq. ft. total	40% complete
Vinton Virginia Gay Hospital General	36	\$377,241.00 Complete 10,478.00/bed	19,744 sq. ft. total 548 sq. ft./bed	55% complete
Cedar Rapids St. Luke's Meth. Hosp. General	150 Add.	\$2,452,800.00 Complete	126,355 sq. ft. total 842 sq. ft./bed	55% complete
De Witt De Witt Comm. Hosp. General	32	\$420,000.00 Complete 14,000.00/bed	17,575 sq. ft. total 586 sq. ft./bed	25% complete
Osage Mitchell Co. Mem. Hosp. General	33	\$450,750.00 Complete 13,659.00/bed	19,589 sq. ft. total 594 sq. ft./bed	53% complete
Jefferson Greene Co. Hospital General	28 Add.	\$480,636.17 Complete	15,000 sq. ft. total	36% complete
Davenport St. Luke's Hospital General	52 Add.	\$1,616,229.10 Complete	59,390 sq. ft. total	35% complete
Harlan Myrtue Mem. Hosp. General	40	\$637,500.00 Estimate	29,700 sq. ft. total	Planning
Osceola Clarke County Hosp. General	32	\$415,000.00 Estimate	19,220 sq. ft. total	Bids Scheduled 5/10/51
Oelwein Mercy Hospital General	27 Add.	\$748,000.00 Estimate	22,000 sq. ft. total	Bids Opened 4/11/51
Audubon Audubon Co. Mem. Hosp. General	30	\$485,647.69 Complete	18,800 sq. ft. total	1% complete
Webster City Hamilton Co. Public Hosp. General	30 Add.	\$563,564.77 Estimate	21,300 sq. ft. total	Planning
Council Bluffs St. Bernard's Hosp. Psychiatric	138 Add.	\$930,000.00 Estimate	44,532 sq. ft. total	Planning
Shenandoah Hand Comm. Hosp. General	24 Add.	\$426,000.00 Estimate	18,300 sq. ft. total	Planning

FOOD INFECTIONS AND FOOD INTOXICATIONS

These things can and do happen. Here is one example:

An outbreak of food poisoning caused by Bos-

ton cream pies recently sickened at least 300 persons in a Nebraska city. About 100 victims were department store employees who ate the pie in their company cafeteria, and another 200 were affected after a fraternal organization banquet. The pies were traced to a bakery which sold to a

number of retail outlets as well. All unsold pies were recalled but not in time to protect a number of other persons who had bought some and later ate them at home.

This type of outbreak, accounting for more than one half of all our food "poisonings," is caused by the formation of toxin by staphylococcus organisms in the food. This is a food intoxication appearing in such foods as custards, meringues, Hollandaise sauce or other similar types of dressings wherein growth of the organisms and toxin formation may occur either before or after the materials have been cooked. The low temperatures and short heating periods are not adequate to destroy toxins and bacteria. Storage at room temperatures either before or after cooking permits growth of bacteria and toxin formation. To prevent spoilage these foods should be prepared within a short time before their use. If they are not to be eaten immediately after they are prepared, they should be placed in the ice box in shallow containers where they will cool quickly. Leftover portions should not be kept for long periods even in the ice box.

An example of a different type: intestinal tract infection due to ingestion of pathogenic bacteria. Here the illness was due to bacteria which multiplied within the intestinal tract after being in-

gested in the food. In the previous example of illness, the damage was due to the toxin from the bacteria present in the food at the time it was consumed.

Not too long ago an Oklahoma church group prepared ice cream for their afternoon meeting. Twenty women present became ill between six and 36 hours after eating the ice cream. Stool cultures revealed a particular strain of the salmonella group of organism, (para-typhoid) which most likely came from animals. This represents infection through careless food handling wherein either the ingredients of the ice cream were permitted to become contaminated or the utensils were not washed thoroughly.

Usually we hear of these food poisoning episodes only when large numbers of people are involved. Yet on a smaller scale they happen daily. They most frequently happen during warm weather when bacteria multiply rapidly. Thus the summer months call for particular caution regarding all uncooked or made-over food dishes. Prepare them, if possible, just before you are to use them. Otherwise refrigerate them until they are to be used. At all times remember the cleanliness of food handling is as important in the home as in the large city restaurant.

IOWA

Final 1950 Population

(With percentage increase or decrease compared with 1940)

LYON 14,697 -4.4	OSCEOLA 10,181 -4.0	DICKINSON 12,756 +4.7	EMMET 14,102 +5.2	KOSSUTH	WINNEBAGO 13,450 -3.7	WORTH 11,068 -3.3	MITCHELL 13,945 -1.2	HOWARD 13,105 -3.1	WINNEBAGO 21,639 -2.8	ALLAMAKEE 18,351 -4.8
SIOUX 26,381 -3.0	O'BRIEN 18,970 -1.7	CLAY 18,103 +1.9	PALO ALTO 15,891 -1.7	26,241 -1.5	HANCOCK 15,077 -2.1	CERRO GORDO 46,053 +5.0	FLOYD 21,505 +6.6	CHICKASAW 15,228 +0.0	FAYETTE	CLAYTON
PLYMOUTH 23,252 -1.1	CHEROKEE 19,052 -1.1	BUENA VISTA 21,113 +6.4	POCAHONTAS 15,496 -4.7	HUMBOLOT 13,117 -2.5	WRIGHT 19,652 -1.9	FRANKLIN 16,268 -0.7	BUTLER 17,394 -3.3	BREMER 18,884 +5.3	28,294 -2.9	22,522 -7.4
WOODBURY 103,917 +0.3	IOA 10,697 -3.2	SAC 17,518 -0.7	CALHOUN 16,925 -3.7	44,241 +6.6	WEBSTER 19,660 -1.3	HAMILTON 22,218 -1.4	GRUNDY 13,722 +1.5	BLACK HAWK 100,448 +25.6	BUCHANAN 21,927 +4.5	DELAWARE 17,734 -4.1
MONONA 16,303 -10.6	CRAWFORD 19,741 -3.9	CARROLL 23,065 +1.3	GREENE 15,544 -6.4	BOONE 28,139 -5.5	STORY 44,294 +32.5	MARSHALL 35,611 +0.6	TAMA 21,688 -3.3	BENTON 22,656 -1.0	LINN 104,274 +17.0	JONES 18,622 -2.9
HARRISON 19,560 -14.1	SHELBY 15,942 -4.7	AUDUBON 11,579 -1.8	GUTHRIE 15,197 -11.7	DALLAS 23,661 -4.0	POLK 226,010 +15.4	JASPER 32,305 +2.6	POWESHIEK 19,344 +3.1	IOWA 15,835 -6.9	JOHNSON 45,756 +37.9	CLINTON 19,401 -2.8
POTTAWATTAMIE 69,682 +4.4	CASS 18,532 -0.6	ADAIR 12,292 -6.9	MADISON 13,131 -9.6	WARREN 17,758 +0.4	MARION 25,930 -4.0	MAHASKA 24,672 -6.8	KEOKUK 16,797 -6.7	WASHINGTON 19,557 -2.5	16,910 +0.2	49,684 +11.1
MILLS 14,064 -6.6	MONTGOMERY 15,685 -0.1	ADAMS 8,753 -13.8	UNION 15,651 -3.9	CLARKE 9,369 -8.4	LUCAS 12,069 -17.2	MONROE 11,814 -18.8	WAPELLO 47,397 +7.0	JEFFERSON 15,696 -0.4	HENRY 18,708 +4.0	SCOTT 100,898 +18.8
FREMONT 12,323 -15.9	PAGE 23,921 -3.9	TAYLOR 12,420 -12.9	RINGSOLD 9,528 -14.4	DECATUR 12,601 -10.1	WAYNE 11,737 -11.8	APPANOOSE 19,683 -18.8	DAVIS 9,959 -10.6	VAN BUREN 11,007 -8.7	LEE 43,102 +4.9	MUSCATINE 32,148 +2.7
										LOUISA 11,101 -2.5

Entire State - 2,621,073
+3.3

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

AMERICAN MEDICAL ASSOCIATION HANDBOOK OF NUTRITION, Second edition. Prepared under the auspices of the Council on Foods and Nutrition of the A.M.A. The Blakiston Co., Philadelphia, 1951. Price \$4.50.

AMERICAN ILLUSTRATED MEDICAL DICTIONARY, by W. A. Newman Dorland, M.D., F.A.C.S., Lt. Col., M.R.C., U. S. Army, Former member of the Committee on Nomenclature and Classification of Diseases of the A.M.A. Twenty-second edition. W. B. Saunders Co., Philadelphia, 1951. Price \$10.00.

HANDBOOK OF MEDICAL MANAGEMENT (Second Edition), by Milton Chatton, M.D., Instructor in Medicine, University of California Medical School, San Francisco; Sheldon Margen, M.D., Clinical Instructor of Medicine, University of California Medical School, San Francisco; and Henry D. Brainerd, M.D., Assistant Clinical Professor of Medicine and Pediatrics, University of California Medical School, San Francisco, Assistant Clinical Professor of Pediatrics, Stanford University School of Medicine, Physician-in-charge, Isolation Division, San Francisco Hospital. University Publishers, Palo Alto, Calif., 1951. Price \$3.00.

PRINCIPLES AND PRACTICE OF OBSTETRICS, by J. P. Greenhill, M.D., Attending Obstetrician and Gynecologist, the Michael Reese Hospital; Obstetrician and Gynecologist, Associate Staff, the Chicago Lying-In Hospital; Attending Gynecologist, Cook County Hospital; Professor of Gynecology, Cook County Graduate School of Medicine. W. B. Saunders Co., Philadelphia, 1951. Price \$12.00.

A TEXTBOOK OF MEDICINE, edited by Russell L. Cecil, M.D., Professor of Clinical Medicine Emeritus, Cornell University, New York; Robert F. Loeb, M.D., Bard Professor of Medicine, Columbia University; associate editors: Alexander B. Gutman, M.D., Professor of Medicine, Columbia University; Walsh McDermott, M.D., Associate Professor of Medicine, Cornell University and Harold G. Wolff, M.D., Associate Professor of Medicine, Cornell University. W. B. Saunders Co., Philadelphia, 1951. Price \$12.00.

THE 1950 YEAR BOOK OF ENDOCRINOLOGY (January, 1950-January, 1951), edited by Willard O. Thompson, M.D., Clinical Professor of Medicine, University of Illinois College of Medicine; attending physician (senior staff) Henry Hospital; attending physician, Gran Hospital, Chicago. The Year Book Publishers, Inc., Chicago, 1951. Price \$5.00.

BOOK REVIEWS

TECHNIQUES IN BRITISH SURGERY, edited by Rodney Main-
got M.D., (W. B. Saunders Co., Philadelphia, \$15.00).

This has been an extremely interesting book to review. Its author, a well known London surgeon, has—
together with 28 of his British colleagues—given us a survey of British surgical technic. This is in nowise a text book on surgery, nor does it purport to be such. There is little in it of diagnosis, and preoperative and postoperative routines have been kept to bare essentials. It actually is a volume written by surgical specialists for other surgical specialists. It does not cover every condition for which operative treatment is recommended, but taken as a whole I believe the book offers a fair cross section of actual operative technic as carried out in England.

The surgical procedures which are favored by each contributor are related in great detail and are more than adequately illustrated. The stitch-by-stitch accounts of each operation are supplemented by adequate accounts of safeguards and dangers which must be considered in each operation. The reviewer does not pre-

tend to an intimate knowledge of all the operative methods discussed. However, in considering those with which he is familiar, there is no apparent difference from the best surgical practice carried on in the United States.

The British surgeons have given an excellent account of themselves in this work, and it deserves examination by every advanced surgical resident and by every surgeon who is not completely satisfied with his own technics—as few of us are.—T. D. Throckmorton, M.D.

PIONEER DOCTOR, by Lewis J. Moorman, M.D. (University of Oklahoma Press, Norman, Okla., \$3.75).

Dr. Moorman, in discussing the experiences of 50 years of medical practice, has described the changing times particularly in Oklahoma. Physicians will find his experiences most interesting and the younger doctors will do well with this opportunity to understand the problems of the practice of medicine in pioneer days.—E. M. George, M.D.

CLINICAL THERAPEUTIC RADIOLOGY, edited by U. V. Portmann, M.D. (Thomas Nelson and Sons, New York).

This volume is a series of monographs covering the entire field of radiation therapy, including radiation protection, physics, biological effect of radiation, tumor sensitivity and medical uses of radioisotopes. There are 53 essayists who represent the best in the field of radiology in the United States, including noteworthy physicists and specialists in medicine and surgery.

This is an excellent book. The topics are thoroughly covered, and while the use of illustrations is not extensive, they are all pertinent to the subject matter. All in all, this is probably the best book on therapeutic radiology to be published up to the present time and is recommended to radiologists and residents in radiology without reserve.—F. A. Springer, M.D.

THE SCIENCE OF HEALTH, by Florence L. Meredith, M.D. (The Blakiston Co., Philadelphia, \$3.75).

This book, prepared especially as an aid to teachers presenting hygiene in a brief yet scientific way to college students and as an aid to students in establishing interest in and profiting from the approach to problems of health science, represents a job well done.

The five sections of the book have excellent sequence. The style and vernacular stimulate interest in their easy to read manner. The author has not sacrificed the scientific viewpoint to style or terminology, but has brought it to the reader in a skillful, usable manner.

This should be an excellent text in the hands of a competent teacher. It should be a real asset to the student in college who needs to know more about the science of health.—V. Culver, R.N.

MEDICAL GYNECOLOGY, by James C. Janney, M.D. (W. B. Saunders Co., Philadelphia, \$6.50).

This book is distinctly different from the usual text-

book of gynecology in that not even one operative procedure is described. Rather, it considers the everyday gynecologic complaints with which women present themselves in every doctor's office. It covers that part of gynecologic practice too frequently neglected in medical school curricula and ordinary textbooks.

The arrangement of the book is also unique. Instead of considering various groups of diseases, the author approaches gynecologic problems according to a natural progression from the patient's complaints to correct diagnosis and proper treatment.

This volume will surely be a valuable possession for anyone interested in medical gynecology.—*J. Hess, Jr., M.D.*

PRIMER ON FRACTURES, prepared by the Special Exhibit Committee on Fractures in Cooperation with the Committee on Scientific Exhibits of the American Medical Association (Paul B. Hoeber, Inc., New York, \$2.00).

This excellent primer represents the sixth edition prepared by the Special Exhibit Committee of the American Medical Association. It will prove invaluable to medical students and general practitioners. Methods of treatment of fractures are well illustrated. The low cost of the book enables any physician to include the volume in his library.—*E. M. George, M.D.*

CURRENT THERAPY, 1951, edited by Howard F. Conn, M.D., (W. B. Saunders Co., Philadelphia, \$10.00).

The 1951 edition of this book should be an excellent addition to the office library of every practicing physician. It is a large book, written by over 200 contributors, all of whom are experts in their particular field. They discuss briefly the treatment of many diseases. Most of the discussions concern medical problems, but a few surgical problems are dealt with as well. In many instances in which there is a diversification of opinion about treatment, two or three authors may discuss one particular subject. The book differs from other texts of therapy in that there is little or no discussion of differential diagnosis, physical findings, etc. The book is well edited and extremely easy to read. It can be recommended without reservation.—*D. A. Glomset, M.D.*

MEDICAL MANAGEMENT OF GASTROINTESTINAL DISORDERS, by Garnett Cheney, M.D. (The Year Book Publishers, Inc., Chicago, \$6.75).

The patient with gastrointestinal complaints requires careful evaluation of symptoms and findings. This excellent book is a practical approach to these problems. The subject material is presented on the basis of the patient's complaints. Differential diagnosis and the management of these conditions is presented in a manner well suited to routine office practice.

Excellent paper, legible type and adequate illustrations combine to make this a highly recommended volume for the busy practitioner.—*A. L. Jenks, Jr., M.D.*

THE 1950 YEAR BOOK OF ORTHOPEDICS AND TRAUMATIC SURGERY (November, 1949-November, 1950), edited by Edward L. Compere, M.D. (The Year Book Publishers, Inc., Chicago, \$5.00).

Dr. Compere has again selected the advancements of the past year in this field. These include the use of streptomycin, ACTH, the use of plastic materials in arthroplasties and the control of bone growth. Any physician will be interested in including this book in his library.—*E. M. George, M.D.*

PHYSIOLOGY OF THE EYE, Clinical Application, by Francis H. Adler, M.D. (C. V. Mosby Co., St. Louis, \$12.00).

This is the new edition of Adler's book. Actually it is not just a new edition but rather an almost completely new book. It covers all the recent advances made in the field of physiology of the eyes and in many instances also of general physiology where this is important in order to understand ocular physiology.

At every turn the importance of physiology for the proper understanding of clinical conditions is impressed upon the reader, a fact which makes the book not only valuable for the study of basic sciences, but gives it a real value for the clinical practice of ophthalmology.

While we marvel at the wealth of new information that has been accumulated on some topics, notably the aqueous formation of intraocular pressure, it is surprising to realize how little we have learned about the mechanism of accommodation and color vision since the days of Helmholtz.

Dr. Adler has done an outstanding piece of work in writing this book, which fills a real need in the library of the practicing, as well as the research ophthalmologist.—*H. H. Gurau, M.D.*

CORONARY CIRCULATION IN HEALTH AND DISEASE, by Donald E. Gregg, M.D. (Lea and Febiger, Philadelphia, \$4.50).

The foreword to this interesting monograph was written by Dr. Carl J. Wiggers, who has contributed much to our knowledge of cardiac physiology. Dr. Gregg has had a considerable experimental background and his scientific explanations are well supported by his research work. There are a number of cardiac physiology statements, now appearing in our heart text books, that Dr. Gregg had definitely proven to be erroneous by his research.

The chapters on "Determinants of Coronary Flow" and especially its relationship with "The Problem of Drugs," "Metabolism and Work" and the "Coronary Circulation in Heart Disease" will appeal to any physician treating heart patients.

Unfortunately Dr. Gregg makes no mention of Dr. J. W. Gofman's recent contributions (Blood Lipids and Human Atherosclerosis) but the monograph had, undoubtedly, left the printer's hands before Gofman's important contributions were announced.—*G. H. Finch, M.D.*

DIABETES GUIDE BOOK FOR THE PHYSICIAN, by the American Diabetes Association, Inc.

This excellent handbook has been prepared by the Committee on Education of the Council of the American Diabetes Association. The booklet is intended to present information to guide immediate action in dealing with the common problems of diabetes. An excellent bibliography accompanies the text. Physicians desiring this helpful guide book are requested to contact the American Diabetes Association, Inc., 11 West 42nd Street, New York 18.—*E. M. George, M.D.*

SOCIETY PROCEEDINGS

MEETINGS

Black Hawk

The Black Hawk County Medical Society held its monthly dinner meeting May 21 at the Elks Club in Waterloo. Dr. Waldemar Argow, Cedar Rapids, spoke on "Stories of America's Little Known Religious Groups," based upon research of Marcus Bach of the SUI Department of Religion.

Clayton, Buchanan and Fayette

A joint meeting of the Clayton, Buchanan and Fayette County Medical Societies was held May 8 at the Airport Inn in Elkader. Dr. Donald C. Conzett and Dr. Robert J. McNamara of Dubuque were guest speakers.

Clinton

Dr. William C. Keettel, Iowa City, spoke on "Some Aspects of Office Gynecology" on May 14 in Clinton at the regular meeting of the Clinton County Medical Society.

Johnson

Members of the Johnson County Medical Society held their annual picnic June 6 at the home of Dr. George C. Albright.

Linn

Dr. Edward H. Files, Cedar Rapids, was elected president of the Linn County Medical Society at the annual meeting May 12 at the Cedar Rapids Country Club. Other officers elected are: president-elect, Dr. J. Stuart McQuiston; vice president, Dr. John H. Rieniets; secretary, Dr. Wayne K. Cooper and treasurer, Dr. Arlan F. Harrington, all of Cedar Rapids.

Pottawattamie

Dr. Tom D. Throckmorton, Des Moines, spoke on "Tantalum Gauze Herniorrhaphies" at the regular meeting of the Pottawattamie County Medical Society May 15 at the Hotel Chieftain in Council Bluffs.

Sioux Valley Medical

The annual spring meeting of the Sioux Valley Hospital Medical Association was held May 10 in Cherokee. Guest speakers included Dr. Clark H. Millikan, Rochester, Minn., who spoke on "Newer Concepts in the Treatment of Cerebral Accidents"; Dr. Wayland K. Hicks, Sioux City, who spoke on "What's New in Urology"; Dr. John F. Kelly, Sioux City, who spoke on "Pruritus Ani" and Dr.

Herbert Kersten, Fort Dodge, who spoke on "Medical-Political Trends."

Washington

The Washington County Medical Society held its monthly meeting May 31 in Washington. Dr. John H. Randall, Iowa City, spoke on "Vaginal Bleeding."

Woodbury

Members of the Woodbury County Medical Society viewed a film of the Fourth General Assembly of the World Medical Association, presented through the courtesy of Wyeth, Inc. at their monthly meeting May 17 at the Mayfair Hotel in Sioux City.

PERSONALS

Dr. Ivan E. Brown, formerly of Spencer, has become associated with **Dr. John C. Peterson** at the Hand Hospital in Hartley.

Dr. Charles W. Gray, former staff physician at the Iowa Tuberculosis Sanatorium at Oakdale, has been named the new administrator of Sunnyslope, the Wapello County Tuberculosis Hospital in Ottumwa.

Dr. Frederick H. Hesser, assistant professor of neurology at the SUI College of Medicine, resigned July 1 to become associate professor of neurology at the Albany Medical College, Albany, N. Y.

Dr. Howard Krouse, assistant professor of psychiatry at the SUI College of Medicine, resigned July 1 to join the staff of the Northwest Clinic of Psychiatry and Neurology in Seattle, Wash.

Dr. George H. Lawrence, director of the Black Hawk County Mental Health Center in Waterloo, has resigned to establish a private neurology and psychiatry practice in St. Louis, Mo.

Dr. Robert E. Petersen, former resident in Iowa City, has become associated with **Dr. Donald C. Conzett** in Dubuque. Dr. Petersen's practice is limited to surgery.

Dr. John R. Scheibe, formerly of Chicago, Ill., has become associated with the staff of the Gilfillan Clinic in Bloomfield. Dr. Scheibe was graduated from the University of Michigan Medical School in 1942 and has been associated in private surgical practice in Chicago.

Dr. Nathan A. Womack, head of the SUI College

of Medicine Department of Surgery, has resigned to take a position as Head of Surgery at the University of North Carolina, Chapel Hill, N. C.

DEATH NOTICES

Dr. William Franklin Amdor, 76, retired Carbon physician, died at his home in Glendale, Calif. May 10. A 1897 graduate of the Barnes Medical College, St. Louis, Mo., Dr. Amdor was a life member of the Adams County and Iowa State Medical Societies.

Dr. Charles F. Baumeister, 73, Avoca physician for 41 years, died in an Omaha, Nebr. hospital May 4 following a year's illness. He was an 1897 graduate of the Marion-Sims College of Medicine, St. Louis, Mo. Dr. Baumeister was a life member of the Pottawattamie County and Iowa State Medical Societies.

Dr. G. G. Bickley, 66, retired Waterloo physician, died May 24 in a Wisconsin sanatorium after a long illness. Dr. Bickley was a 1911 graduate of the Hannemann Medical College and Hospital in Chicago. Dr. Bickley was a member of the Black Hawk County and Iowa State Medical Societies.

Dr. Luther Donald MacNaughton, 80, Eagle Grove physician for more than 50 years, died in a Fort Dodge Hospital June 11. He was an 1897 graduate of the Drake University College of Medicine. Dr. MacNaughton was a member of the Wright County and Iowa State Medical Societies.

Dr. George W. Tapper, 81, practicing physician in Monona for 37 years, died May 24 at his home in Monona. He was an 1896 graduate of the State University of Iowa College of Medicine. Dr. Tapper was a former member of the Clayton County and Iowa State Medical Societies.

ROSTER OF IOWA PHYSICIANS IN MILITARY SERVICE

As of June 15, 1951

Ackerman, J. H., Clarksville
(Hot Springs, Ark.).....U.S.P.H.S.
Alberts, M. E., Des Moines
(Des Moines).....Lt. (jg), U.S.N.R.
Ashby, J. D., Davenport
(Battle Creek, Mich.).....Major, A.U.S.
Bartholomew, R. D., Lake City
(Oakland, Calif.).....U.S.N.R.
Bartley, R. L., Sully
(Pensacola, Fla.).....U.S.N.R.
Benge, D. K., Dows.....
Camp, J. R., Thompson
(San Diego, Calif.).....Lt. (j.g.), U.S.N.R.
Carroll, T. J., Sibley.....
Carson, R. W., Winterset
(APO San Francisco, Calif.).....1st Lt., A.U.S.
Coyne, K. M., Burlington
(FPO San Francisco, Calif.).....Cindr., U.S.N.R.
Dalager, R. D., Ottumwa
(Junction City, Kan.).....A.U.S.
Davidson, M. C.
(APO New York, N. Y.).....Lt. Col., A.U.S.

Davis, S. K., Des Moines
(Seattle, Wash.).....
Donahoe, J. F., Fort Dodge
(San Antonio, Texas).....U.S.A.F.
Fitch, R. E., Des Moines
(Bangor, Me.).....1st. Lt., U.S.A.F.
From, Paul, Des Moines
(Lackland Field, Texas).....1st Lt., A.U.S.
Goenne, W. C., Jr., Davenport
(Tacoma, Wash.).....Major, A.U.S.
Jensen, K. V., Newton
(San Antonio, Texas).....1st Lt., U.S.A.F.
Johnson, F. N., Madrid
(San Antonio, Texas).....1st Lt., A.U.S.
Johnson, M. H., Iowa City
(Tacoma, Wash.).....Capt., A.U.S.
Keil, P. G., Des Moines (Bangor, Me.).....U.S.A.F.
King, R. E., Des Moines
(Camp Polk, La.).....Capt., A.U.S.
Krause, R. E., Ottumwa.....
Kurth, R. J., Waterloo.....A.U.S.
Landis, S. N., Des Moines
(Olathe, Kan.).....Major, U.S.A.F.
Leiter E. R. K., Des Moines (Bangor, Me.).....U.S.A.F.
McCrary, W. A., Lake City
(APO San Francisco, Calif.).....1st Lt., A.U.S.
Mangan, J. T., Forest City (FPO San Francisco, Calif.)
Marquis, F. M., Waterloo.....A.U.S.
Merkel, B. M., Des Moines
(Bangor, Me.).....Col., U.S.A.F.
Mitchell, R. C., Iowa City
(San Antonio, Texas).....1st Lt., A.U.S.
Montgomery, A. E., Jefferson
(APO San Francisco, Calif.).....Lt. Col., A.U.S.
Mulder, L., Sioux Center
(Sioux Falls, S. D.).....Capt., U.S.A.F.
Neagle, P. E., Dubuque.....
Nordin, C. A., Des Moines
(Lackland Field, Texas).....U.S.A.F.
Odell, J. E., Iowa City (Westlaco, Texas).....
Piburn, M. F., Preston.....1st Lt., A.U.S.
Robb, W. J., Cedar Rapids
(San Diego, Calif.).....U.S.N.R.
Ruble, R. L., Nevada (Camp Chaffee, Ark.).....A.U.S.
Schultz, M. H., Waterloo
(Weaver, S. D.).....Capt., U.S.A.F.
Simonsen, M. H., Sioux City
(Oakland, Calif.).....Lt., U.S.N.
Smith, C. B., Iowa City
(Fort Jackson, S. C.).....Capt., A.U.S.
Storck, R. D., Dubuque
(San Francisco, Calif.).....Lt.
Stutsman, R. E., Washington
(San Diego, Calif.).....Cmdr., U.S.N.
Taylor, H. N., Iowa City.....
Tempel, P. F., Steamboat Rock
(Fort Riley, Kan.).....A.U.S.
Thomas, J. H., Sibley (Austin, Texas).....U.S.A.F.
Tice, W. K., Iowa City
(APO San Francisco, Calif.).....A.U.S.
Tyler, D. E., Shenandoah.....U.S.N.
Vincent, J. F., Fort Dodge
(Clark Ridge, Ill.).....Capt., U.S.A.F.
Von Lackum, L. S., Oelwein
(FPO San Francisco, Calif.).....Lt. (j.g.), U.S.N.R.
Walz, D. V., Le Mars (Weaver, S. D.).....1st Lt., U.S.A.F.
Waldmann, W. B., Council Bluffs.....
Wehrmacher, W. H., Iowa City
(Oceanside, Calif.).....U.S.N.R.
Wheeler, R. A., Des Moines
(Fort Sheridan, Ill.).....1st Lt., A.U.S.
*Wilkins, D. S., Iowa City
(APO San Francisco, Calif.).....Capt., A.U.S.
Woolfolk, J. H., II, Waterloo
(Weaver, S. D.).....U.S.A.F.
Zeilenga, R. H., Orange City.....1st Lt., U.S.A.F.

* Deceased.

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No. 8

LOWERING MORTALITY FROM BULBAR POLIOMYELITIS*

THOMAS C. GALLOWAY, M.D.**
EVANSTON, ILLINOIS

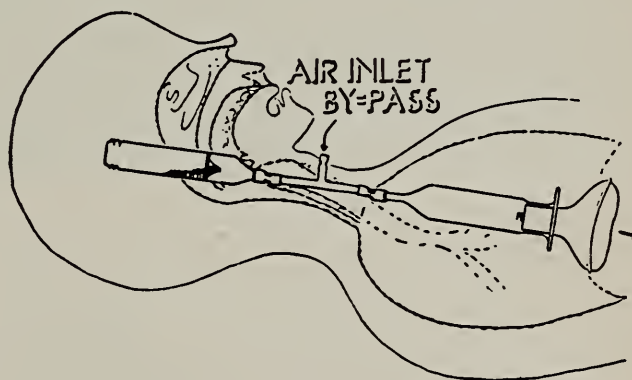
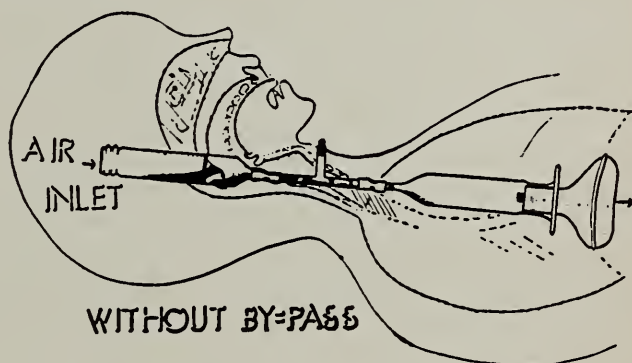
AND

MARTIN H. SEIFERT, M.D.**
WILMETTE, ILLINOIS

LAST YEAR in *The Journal of the Iowa State Medical Society* appeared an excellent paper by Mitchell and Hill¹ which gave judicial consideration to the problem of bulbar polio. It might seem unnecessary to further discuss this subject but this presentation is given in a different spirit, frankly crusading and is presented in the firm conviction that the mortality from this disease can be greatly lowered if it is treated as a peripheral respiratory problem and if the preconception be dismissed that it is especially or even often a disease in which there is overwhelming virus infection of vital centers.

Our first contact with this disease was projected against a background of considerable experience with other forms of respiratory obstruction and from the onset it seemed clearly to have the same outline.^{2, 3, 4} A polio patient with difficulty in swallowing had gone from excitement to restlessness, disorientation, coma, cyanosis, almost pulselessness and respiratory arrest for about three minutes. Fluid overflowed from nose and mouth and by direct inspection was seen to lie over the larynx. On doing a tracheotomy, clearing the airway and using artificial respiration and the respirator, the patient came to normal color, pulse, and sensorium in 45 minutes. Obviously it was hardly possible for recovery to occur from infection in such a short time. A simpler explanation is that it followed the relief of anoxia and carbon dioxide excess by clearing the airway and restoring respiration. While the result has not usually been so dramatic, we have had a similar result in enough cases to make us believe it the rule, when anoxia has not been so long continued as to pro-

duce irreversible damage. It is one of the important reasons among others to be discussed for believing that anoxia and carbon dioxide excess are usually responsible for the serious effects in this disease.



WITH BY-PASS SIMULATING TRACHEOTOMY

Figure 1. A model to simulate the effect of voluntary breathing or a respirator when there is fluid in the upper airway. With moderately viscid fluid, intravenous tube, T tube and aseptosyringe it acts as shown. When the by-pass is open, no fluid is drawn—illustrating the effect of tracheotomy. Reproduced from *Archives of Otolaryngology*, 46:125 (August) 1947.

Treatment based on that concept led to no mortality in 12 successive patients with pharyngeal paralysis treated early under good control, in an area where the mortality at the same time was 27 per cent and 38 per cent; and over a period of four years at the Evanston Hospital we have had a mortality in bulbar polio of 12.8 per cent com-

* Presented at the One Hundredth Meeting, Iowa State Medical Society, Sioux City, April 23-25, 1951.

** From Northwestern University Medical School and Evanston Hospital, Chicago, Ill.

pared to 38.3 per cent for the state of Illinois for that time. Some of the later cases were unfavorable because they were transported from greater distances and were seen later in the disease. Elsewhere more favorable statistics have come from clinics where the same general principles were followed.^{5, 6}

Certain preconceptions about bulbar polio seemed to have developed from the assumption that certain clinical effects should follow from histologically demonstrated lesions in the central nervous system and naturally efforts are constantly being made to correlate such findings. There is not space to discuss this phase of the subject but as Bodian,⁷ one of the foremost students of histopathology of the disease in humans and animals has said, such attempts are dangerous and not at present well substantiated. The usually complete recovery of function in favorable cases of bulbar polio is against the idea that such viral effect is destructive. Kubicek's⁸ idea that viral infection by edema, cell debris and vascular damage blocks oxygen and carbon dioxide exchange of cells of the vital centers and thus magnifies the effect of anoxia, may explain some of the symptoms, especially medullary depression.

To clearly visualize this respiratory problem it is necessary to consider: (1) the other secondary effects of respiratory obstruction and (2) the effects of anoxia and carbon dioxide accumulation.

It has been pointed out that obstruction at the laryngotracheal, or bronchial level leads to marked secondary changes lower in the pulmonary tract especially congestion, stasis, edema and transudation and that with increased negative intrathoracic pressure suction is exercised on the capillary and bronchial walls producing exudate in alveoli and bronchioles.⁹ Atelectasis, emphysema, pulmonary edema and, with secondary infection, pneumonitis and marked lung changes occur. It is to be noted that such findings are the rule in patients dying of poliomyelitis.

Of even more importance are anoxia and carbon dioxide excess and their symptoms and dangers. The time element is especially vital. We have previously cited evidence⁴ that even 60 seconds of anoxia may produce distinct morphologic changes in the brain; that three to eight minutes of anoxia may produce widespread damage and necrosis of brain cells or even death; that repeated periods of hypoxia may have a cumulative effect; and that cells previously damaged by anoxia or infection are more susceptible to further damage by anoxia. But of even more importance is the accumulation of carbon dioxide with its depression of the respiratory and other centers of the medulla, its damage to the adrenals, to the conduction mechanism and muscle of the heart and circulatory system by both central and peripheral effects. There is evidence that it may be responsible for effects ascribed both to viral infection and to oxygen lack, namely dyspnea, restlessness, disorientation, mental depression, leth-

argy and coma, rise in blood pressure and later fall, vasomotor failure and circulatory collapse.⁴

Gray¹⁰ has pointed out that with diminution of ventilatory capacity due to obstruction, producing only the mild oxygen lack equivalent to an altitude of about 10,000 feet, there may be an approach to a narcotic level of carbon dioxide, and with moderate further diminution a lethal effect. This should emphasize the importance of clearing the airway over mere administration of oxygen and prevent over dependence on the oximeter and similar devices.

The symptoms of anoxia (including carbon dioxide accumulation) are important to remember especially in a mixed clinical picture because their recognition not only gives a truer picture of the relative importance of virus infection and respiratory difficulty but they best measure the need for active treatment. Early are headache, excitement or euphoria, followed by confusion, disorientation, irrationality, lethargy and finally coma. Antagonism and combativeness make cooperation less likely, may lead to unmerited neglect of the patient and make more positive action necessary. Restlessness makes greater demand for oxygen and may lead to the fatal mistake of sedation. Dyspnea may not be noted in a very ill patient; cyanosis varies greatly, is a late symptom and is difficult to assess; increased blood pressure may be significant.

On the basis of the foregoing we believe that secretional obstruction, spasm and anoxia can explain the symptoms and grave effects and are much more important than direct central effect of the virus in bulbar poliomyelitis.

Three clinical types of respiratory difficulty in poliomyelitis affecting respiration are usually accepted:

1. Spinal with paralysis of intercostal muscles and diaphragm. These patients fall easily into rhythm of the respirator and do well with it.

2. Bulbar paralysis with the swallowing mechanism involved and accumulation of secretion, food and fluids and vomitus in, or over, the airway.

3. Bulbar-spinal, a combination of 1 and 2.

4. A group with disturbances in rhythm, depth and coordination of respiration. This has often been ascribed to infection of medullary nuclei but we believe it most often a result of conflict between ventilatory demand and protective mechanisms, plus perhaps the effect of anoxia and carbon dioxide accumulation on the medulla. We believe this because we have seen it abolished by pentothal sodium (with serious results) and disappear usually and rather rapidly on clearing the airway and providing free respiration, if this is done fairly early.

We believe then that the primary difficulty in bulbar poliomyelitis is difficulty with the swallowing mechanism, with accumulation of secretion and food and vomitus in or over the airway. Normally there are 1,000 to 1,500 ml. of saliva per

day, increased with nervous disease, to which may be added inflammatory secretion and fluids or food injudiciously given. We have recovered by suction from the pharynx over 2,000 ml. of fluid per day. Cough and other expulsive mechanisms are ineffective and unless fluid is kept removed by treatment it will lead to anoxia by preventing ingress of air, by producing laryngeal spasm, by blocking bronchioles, and by flooding and secondary damage to the respiratory area of the lungs. (Figure 1)

tion may as quickly pass. Seconds count in any form of asphyxia. Ignorance or indecision and inertia may hold to stupid inaction a man who would without hesitation leap into a raging torrent to save a child in hardly graver danger.

If this visualization of the process is right as we think it is, control of the disease should be easy if undertaken early, decisively, and with careful attention. If delay, neglect, or procrastination allow to develop severe anoxia and carbon dioxide accumulation with the secondary effects of ob-



Figure 2. Angle of declivity of airway from body axis shown by radio opaque medium. For postural drainage elevation should be 23 degrees to 25 degrees.

In 1943 we thought we had made an original observation that patients thus drown in their own secretions. But in 1929 Durand¹¹ observed "that in his opinion many polio deaths are due to drowning as many men must have observed" and he made the vital recommendation for postural drainage. The analogy is good since except for speed the two processes are similar. As Motley¹² points out laryngeal spasm is often an important factor in the suffocation of drowning and often little or no fluid is found in the lungs or lower airway. It has seemed that spasm may be important in bulbar poliomyelitis and that it is more likely to be a factor than obstructive median paralysis of the vocal cords. Also as Furstenberg¹³ has pointed out, nuclear or supranuclear paralysis of the cords is flaccid and not spastic.

This is also useful comparison since the time element may be as short and the moment for ac-

struction the condition becomes desperate and use of extreme care and all aids may be futile.

In order of importance we list postural drainage, continuous suction, tracheotomy if necessary, parenteral feeding and the respirator if there is central depression and oxygen administration.

Postural drainage has long been emphasized. From Figure 2 it will be seen that the declivity of the normal airway in the supine position is from 17° to 20° from the body axis. While recent work indicates that some diminution of vital capacity up to 15 to 20 per cent may occur in postural drainage⁶ and this may be important in seriously ill patients our experience of 20 years indicates that this is not of comparable importance to the great benefit that comes from keeping or draining secretion from the lung area. We now advocate elevation of the bed to a 20° or 25° angle as this usually is enough. The greater elevation advo-

cated previously was difficult to obtain and might conceivably have adverse effect on edema, regurgitation, and respiratory and cardiac efficiency.

Theoretically the face down position should give more effective postural drainage and it is useful where good suction is not available and during transportation. Such a position is well tolerated by infants but is usually not easy to maintain with older children or adults.

a fairly stiff tube to a catheter or plastic tube with multiple openings lying in the potential pool but removing secretion as it covers the openings.

It does not seem possible to avoid periods of anoxia by any system of intermittent mechanical suction as it is used in many otherwise desirable setups. That seems to us to constitute perhaps the gravest weakness in most treatment. If at the first sign of swallowing difficulty, postural drainage and

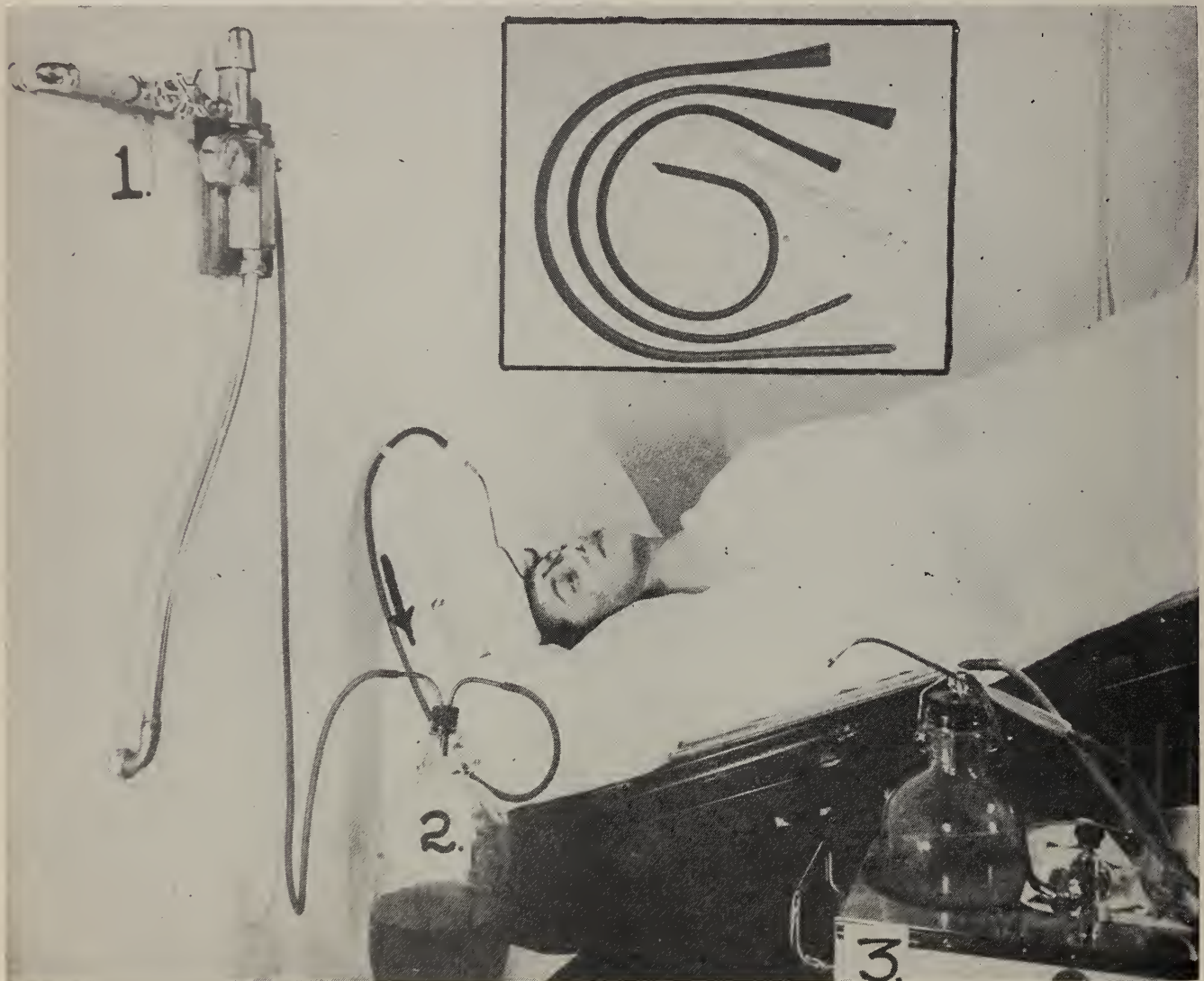


Figure 3. (1.) is water suction fixed to the wall, connected by fairly stiff tube to collecting bottle. (2.) this to catheter through patient's nose to the pharynx. (3.) is a standby mechanical suction. Beveled and whistle tip catheters are shown in insert. Reproduced from the *Laryngoscope*, June, 1951.

In good postural drainage, secretion should collect in the nasopharynx, hypopharynx, or in the cheek. From this as a sump it can be collected by suction. Bearing in mind that three to five minutes of anoxia can be serious in a normal individual, and probably considerable less time can permit grievous damage in a depressed or hypoxic patient, it has always seemed most important that the fluid be removed as fast as it collects by continuous suction. In my experience that has been secured only by a Venturi type, almost foolproof apparatus connected through a collecting bottle containing antiseptic.* This in turn is connected by

continuous suction are used, in our experience severe symptoms seldom develop, management remains easy, and the outcome is successful in most cases.

Close general medical supervision is absolutely essential. In our cases fluids and electrolytes are given parenterally until swallowing is possible, usually from the fifth to tenth day. Vitamin C is given from the outset and protein hydrolysate and vitamin B complex intravenously after about the third day. Bower⁶ and his associates emphasize the protein depletion and give the good advice to use plasma in severe cases. They also point out the damage of potassium deficiency with marked

*Manufactured by the S. M. R. Co., Los Angeles, Calif.

weakness and possible cardiac disturbance. The potassium level in serum varies easily in critical values and it may be cautiously given intravenously especially under laboratory control, but proper amounts are easily picked up from food after gavage which the Los Angeles group therefore institute rather early.

Antibiotics, never sulfonamides, are used for the prophylaxis of infection. If continued too long monilia or other fungi may over grow. We had serious trouble with tracheal exudate in one case apparently because of that.

If patients are seen late or temporized, active additional measures are necessary. Abundant experience has proven the value of tracheotomy and its freedom from complications. It short circuits secretion, breaks the inspiratory pull on secretion, permits removal of fluid already aspirated and provides a free airway. The patient with anoxia and carbon dioxide accumulation may go as quickly into grave danger as an anesthetized patient may pass from the superficial to the deep plane, and when indicated tracheotomy becomes an emergency operation. It would be much better to do prophylactic tracheotomy on all bulbar cases with swallowing difficulty than to wait too long on any.

Tracheotomy shall be done fairly high, usually through the second tracheal ring and third interspace, to permit later use of the respirator if necessary. It is done best over a bronchoscope or endotracheal tube; and with marked depression with an intermittent positive pressure apparatus, or with a chest respirator. Of course it usually should be done before the respiratory center is depressed.

Our indications for tracheotomy remain as previously stated:

1. Progressive anoxia with secretion in the upper airway.
2. Unconsciousness or pronounced restlessness in a patient who does not respond to other treatment in a few minutes.
3. Pronounced restlessness or stupor in a patient in a respirator, even if the paralysis is apparently of the spinal type.
4. Fluid accumulation not otherwise certainly taken care of in a patient who requires a respirator.
5. Bilateral paralysis or spasm of the vocal cords.
6. Rapidly progressive bulbar symptoms.
7. Grave signs of vasomotor failure.
8. Untrained or inefficient attendants, inadequate equipment or poor cooperation of the patient, with the doubt that the airway will be kept constantly free of secretions.

The respirator has not had too good a reputation, we think because patients have been placed in it without clearing the airway or short circuiting secretion. But in our experience if that is done we find it is without danger and frequently life saving. Patients even without spinal paralysis are exhausted and the respiratory centers may be depressed by anoxia as shown by the rapid improve-

ment in the respirator. If the airway is open, they usually fall into good rhythm with the machine.

Oxygen has not been unduly emphasized in treatment although it is of considerable value especially while more effective aid is being organized. Its administration is not so important as the elimination of accumulated carbon dioxide for which a cleared airway is the first essential and much more vital than any technics of oxygen administration. Chiefly because it gives no information about carbon dioxide we have also stopped using the oximeter.

For serious cases especially with developing pulmonary edema positive pressure given by such an apparatus as that of Bennet⁶ may be valuable. The cam attachment giving a more physiologic cycle and the ventilation meter for a measure of tidal air and ventilatory capacity developed by Bowers⁶ and his group at Los Angeles are useful.

Where should bulbar polio be treated and by whom? Theoretically or practically we think it can best be done in an institution with every facility, with doctors and nurses alive through experience to the urgency of the disease and to the recognition of early signs of trouble. The team should surely include a laryngologist trained in respiratory problems who should see the patient at the first sign of swallowing difficulty, assess the danger and intervene on a joint decision when the progress is definitely unfavorable.

Transportation for such patients is exhausting and leads more quickly to development to anoxia. If at the first sign of trouble the patient can be moved in postural drainage to a center before serious trouble develops we believe this should be done. If not it seems preferable to put him even in a small hospital in postural drainage with suction with the minimum of disturbance and to do an early tracheotomy.

Polio in pregnancy has had a bad record because the filled uterus embarrasses respiration and the heart. If near term with a viable embryo we believe tracheotomy should be done early followed by Caesarean section and the usual management and the outlook will be good.

CONCLUSIONS

1. Experience does not justify the defeatist attitude that overwhelming infection of vital centers prevents successful treatment of bulbar poliomyelitis.
2. With visualization of the physiopathology of the disease and decisive and meticulous treatment by methods which provide a clear airway, with the respirator if needed we believe few patients with this disease should die.

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TRACHEOTOMY*

BYRON M. MERKEL, M.D.**

DES MOINES

THE final test of adequacy for a system of the healing art is the ability to modify its performance to meet the changing needs of its recipients. The needs of its recipients are changing because of progressive increase in our knowledge of physiology, both normal and pathological.

A system of the healing arts is comparable to a building. Its strength and usefulness depends on several factors: The foundation, the building materials, the manner of use of these materials, the design and the ability to modify its structure to meet our needs and desires. The hotel with individual heating units, such as fireplaces, was once the best that we could find. It is, however, vastly different from the modern air-conditioned hostelry.

In our system of medicine, the foundation is based on the oath of Hippocrates and is constructed from the recorded experiences of our predecessors. One would be foolish to ignore the events of historical medicine as an essential part of the foundation, but one would be just as foolish to accept these concepts as the final, unchangeable structure of our own system of practice today.

The building materials which we use are the drugs and the applications of physical procedures, such as operative technics. These are inseparably united in progress.

It would be difficult to conceive of the advances in surgical technic without the admission of the essential part which advances in anesthesia have played in this achievement.

Given the benefits of a good foundation and excellent building materials, a poor workman can still make a failure of the structure if he does not know how, when and where to use his equipment. The question of how to use our equipment is one which is most often stressed in the formal training

in medical school. In common with when and where, how to use our equipment depends upon an understanding of basic physiology, both normal and in the presence of disease or dysfunction. The primary mission of this paper is to present a concept of when and where to use one of our valuable procedures—tracheotomy.

Jackson and Jackson,¹ in 1939, stated, "Tracheotomy, one of the oldest operations in surgery is done badly today, more often than any other surgical procedure." They feel that the faults are closely related to the surgical literature, one of the greatest of which is the perpetuation of the traditional division of the procedures into a high tracheotomy and a low tracheotomy. This division was made with reference solely to whether the opening into the trachea was done above (high) or below (low) the inconsequential isthmus of the thyroid gland. They divide the operation into two types of technics depending on the circumstances under which the procedure is done. Thus the two types, orderly and emergency tracheotomy, are both done with one purpose—to provide an adequate opening into the trachea through the second and fourth tracheal rings.

The most important improvement in the technic of tracheotomy in recent years has been the conversion of an emergency or hasty operation into an orderly type through the establishment of an adequate airway by means of endoscopy. This is ideally done by the insertion of a bronchoscope in the emergency case. With the bronchoscope in place, the inspection of the tracheal-bronchial tree can be made, aspiration of secretion carried out, and oxygen (CO₂) mixture can be piped into the lung. While these life saving measures are being done, preparation for an orderly tracheotomy can be completed and the operation done over the bronchoscope. If a bronchoscope is not available, a Mosher life saving tube or an anesthetist's endo-tracheal tube can be used in its place.

The technic of tracheotomy has been so clearly and concisely presented by Jackson and Jackson¹ that nothing is to be gained by "gilding the lily." I would urge each one of you to memorize this classical description. It might well mean the saving of a life in dire emergency.

The indications for tracheotomy were listed by Jackson² many years ago, as:

1. Preliminary to various operative procedures on the larynx.
2. Therapeutic—to put the larynx at rest.
3. To prevent asphyxia in stenosis of the larynx or trachea (obstructive laryngeal dyspnea). This is listed as the most important and frequent indication.
4. Impending drowning of the patient in his own secretion.

This last indication was widely neglected, although Jackson³ wrote an article on this subject as early as 1911.

Tracheotomy is still referred to in most litera-

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ture as an operation for relief of upper respiratory or laryngeal obstruction. Our medical students are taught to recognize the cardinal signs of upper respiratory obstruction. These are:

1. Respiratory stridor, chiefly inspiratory.

2. Full use of all respiratory muscles producing indrawing, first in the supra sternal notch, later in the supra clavicular fossae, later in the intercostal spaces and finally depression of the tip of the sternum.

3. The use of accessory muscles of respiration including the dilators of the alae nasi, the openers of the mouth, etc.

4. Evidence of continued hypoxia. This includes (a) restlessness, (b) ashey, gray pallor, (c) cyanosis. Our medical students were taught that unless these cardinal signs were present, there was no indication for doing a tracheotomy.

In my first ten years of private practice, I was not consulted for, nor would I have done a tracheotomy unless these conditions were present. In the past five years my opinion in this respect has changed greatly. This change has been due largely to a better understanding of respiratory physiology. In an excellent study of this subject, Gray⁴ concludes that "only relief of the obstruction and maintenance of the airway can reverse the effects of respiratory obstruction." To a considerable degree, it has also been due to pressure from my colleagues for a solution to some of their acute problems in disturbed respiratory function where laryngeal obstruction was not a significant factor. Bulbar poliomyelitis, tetanus, pulmonary edema and severe brain injuries are some of these problems. In accepting the concept that laryngeal or upper respiratory obstruction is the only indication for tracheotomy, I am convinced that the laryngologist is denying a life saving procedure in a great number of cases. In support of this idea, several cases seen in the past three years are presented. Tracheotomy was presumably life saving in each one, and yet laryngeal obstruction was not a significant factor in any of these cases.

The common factor in these cases was inability on the part of the patient to properly dispose of his pharyngeal and tracheo-bronchial secretions. Each one was drowning in his own secretion. The reason for this inability varied considerably. In the bulbar polio cases, it was loss of swallowing and loss of respiratory muscles, i.e., the intercostals and the diaphragm. In one case the reason was a hemorrhage in the sub-glottic region. On three of the cases, severe brain injury with profound loss of consciousness and an inability to control the fluid balance were responsible.

I am not unmindful of the use of repeated aspiration by endoscopic means. This was done as a preliminary step, but the primary condition in these cases was not of a transient nature and the recognized limitations of repeated bronchial aspiration by endoscopic means made it impossible to depend upon this method of control.

The lack of adequately trained personnel pre-

vented our providing the instantly available endobronchial aspirations needed in these cases throughout the 24 hour period. This is comparable to the objection to intubation for cases of laryngeal obstruction. The average student nurse can be quickly trained to do tracheo-bronchial aspiration in a tracheotomized case. She can also be trained to recognize evidence of inadequate removal of secretions or the formation of obstruction from crusting, etc. In this event she has adequate time to call for help. In the meantime, oxygen can be delivered—under pressure, if necessary—to the tracheo-bronchial tree.

Lower bronchoscopy (insertion of a bronchoscope through the tracheal opening) can be easily and quickly done. This provides a method of quickly examining the tracheo-bronchial tree directly. Obstructive crusts can be removed, edematous bronchial orifices can be reduced with direct application of adrenalin. This procedure can be repeated as frequently as necessary without the production of any trauma to the pharyngeal or laryngeal structures.

The following cases illustrate the need for tracheotomy as a life saving procedure although laryngeal or upper respiratory obstruction was not a factor of significance in any of them:

Tetanus

Case No. 1 R. D., M-6. Admitted to Blank Memorial Hospital, Des Moines, with a diagnosis of tetanus. Moderately severe generalized spasms were relieved by Anertin Anesthesia, but signs of accumulating moisture in the tracheo-bronchial tree were quickly relieved by tracheotomy. The lungs were kept clean through this procedure for many days while continuous Anertin Anesthesia was used to control the convulsions. He made a complete recovery and was discharged on the twenty-fifth day. The tracheal canula was removed on the twentieth day. In two of our earlier cases, tracheotomy was not done early and both of these patients died.

Fractured Cervical Vertebrae

Case No. 2 J. L., F-25. Injured in an automobile accident, sustaining a fracture of the sixth and seventh cervical vertebrae with severe cord injury. She was a quadriplegic and because of weakness of her respiratory muscles was unable to keep her tracheo-bronchial tree cleared of secretion. Per oral endoscopy was contraindicated because of her cervical cord injury and complete fixation of her neck. Tracheotomy was done and the airway maintained. She survived and recovered partial use of her upper extremities, but has a permanent paralysis from the waist down. Tracheotomy, May 15; Tube out, June 20—35 days.

Head Injury

Case No. 3 F. H., M-32. Severe head injury with deep unconsciousness for many days. Also had before his injury a mild, chronic, bronchiectasis. Tracheotomy was done early and enabled us to keep him from drowning in his own secretion.

Complete recovery. Tracheotomy, September 28; Tube out, November 4—36 days.

Case No. 4 F. W., M-40. Severe head injury with profound unconsciousness for several weeks. Tracheotomy was done because of difficulty in keeping airway clear, by per oral route. Recovery, but severe residual brain damage.

Case No. 5 S. U., M-65. Kicked by a horse and thrown against the stable. Definite evidence of basal skull fracture. Had several generalized convulsions and tracheotomy was necessary to maintain his airway. Complete recovery. Tracheotomy, December 15; Tube removed, December 31—16 days.

Subglottic Hemorrhage

Case No. 6 O. S., F-36. Had a severe persistent subglottic hemorrhage following a lung mapping by the trans-tracheal puncture method. Two attempts at endoscopic cautery were only of brief value in this condition. Tracheotomy and packing with gel foam in the subglottic area resulted in complete recovery.

Pseudo Bulbar Palsy

Case No. 7 B. J., M-60. Sent in as a case of diphtheria and inability to swallow. The "diphtheria" proved to be a simple coated tongue and his inability to swallow was from unilateral vocal cord paralysis and weakness of the constrictor (pharyngeal) muscles from a cerebro vascular accident. Tracheotomy was not done on this case, but only because of the success of frequent pharyngeal aspirations, position, etc., I would not hesitate to recommend it if these measures fail.

Bulbar Polio

Cases No. 8 to No. 18. These ten cases represent our recent experience with tracheotomy in bulbar poliomyelitis. They have been reported in a recent article by Hill and Mitchell.⁵ This is a complete report on ten cases. The excellent work done by Galloway, Priest and others^{6,7,8} has served to stimulate our interest in this phase of the problem. We, too, have tried to find one test or finding that we could say was a definite indication for tracheotomy in bulbar polio, although at present we have reverted to the unscientific, but practical question, "Can the patient handle his own secretion?" If the answer is definitely, "yes," then we do not advise the procedure. If it is "doubtful" or "no," we do not hesitate to do a tracheotomy. Some of the mechanical problems involved in the after care have been solved by Downing et al⁹ in a recent article concerning particularly the question of pressure and moisture of the air supplied to the tracheotomy tube.

Multiple Fracture

Case No. 19 E. J., M-47. Injured May 18, 1950, in train accident. Diagnosis (1) Fracture comminuted, right femur, (2) Fracture-dislocation, left elbow, (3) Fracture, left scapula, (4) Fracture, right scapula, (5) Fracture, right clavicle, (6) Fracture, ribs 2, 3, and 4, right, (7) Fracture, ribs 2, 3, and 4, left, (8) Pneumothorax, left, (9) Complete opacity, right chest (atelectasis).

Tracheotomy was done on the fifth day because of inability to keep the tracheo-bronchial tree clean. This also illustrates the fact that foreign bodies in the lung, if not removed, soon cease to stimulate any cough reflex. This patient simply refused to even try to cough on his fifth day. This was due to pain attendant to cough and to the failure of the cough reflex. He made a complete recovery. His tube was removed on the thirty-fifth day.

This presentation might well be considered a sermon. The text is taken from Jackson's article published in 1911, "The Drowning of the Patient in His Own Secretion." Nineteen cases are presented in which the operation of tracheotomy was considered to be life saving, yet the factor of upper respiratory obstruction was not significant in any of these cases. Is it not about time we changed our concept of the common indications for tracheotomy?

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SPEAKER'S BUREAU RADIO SCHEDULE

WOI—Thursdays at 11:15 a. m.

TEA FOR THREE

August 2 —Headache

August 9 —Insomnia

August 16—Feet

August 23—Weight

August 30—Rheumatism

WSUI—Tuesdays at 11:45 a. m.

THE BEST IS YET TO BE

July 31—Class Reunion

August 7 —Out of the Silence

August 14—Years of Tomorrow

August 21—Three Score and Ten

August 28—Indian Summer

ELECTROCARDIOGRAPHIC CHANGES IN ACUTE POLIOMYELITIS*

JOHN E. GUSTAFSON, M. D.**

DES MOINES

AND

HAROLD MARGULIES, M. D.†

DES MOINES

Myocarditis in acute poliomyelitis has become a frequently reported complication only in the last ten years although there have been scattered reports for many years.

In 1942 Saphir and Wile¹ reported myocarditis in six of seven patients dying of acute poliomyelitis. In 1943 Peale and Lucchesi² reported minimal myocardial changes in five of seven patients. In 1948 Dolgopel and Cragon³ and in 1949 Ludden and Edwards⁴ summarized their findings over long periods of time. Dolgopel and Cragon found myocarditis in 17.4 per cent of 92 cases. Ludden and Edwards found myocarditis in 40 per cent of 35 cases. Chart 1 summarizes eight of these series.

Chart 1
INCIDENCE OF MYOCARDITIS

	No. of Autopsies	No. with Myocarditis	% with Myocarditis
Dolgopel & Cragon	92	16	17.4
Saphir and Wile	7	6	85.7
Saphir, 1945	17	10	58.8
Ludden and Edwards	35	14	40.0
Peale and Lucchesi	7	5	71.4
Geffer, Leaman, et al	6	5	83.3
Spain, Bradess, Parsonnet	14	12	85.6
Clawson	53	12	22.7
Total	231	80	34.2

Gross changes described are usually limited to dilatation especially of the right ventricle. At least two writers have described verrucous endocarditis, usually of the mitral valve.^{4, 5} None of these cases had a rheumatic history and Aschoff bodies were not found.

The microscopic lesions vary greatly and Weinstein and Shelokov believe that the minimal changes are hypoxic in origin and that the more severe lesions are due to invasion of the heart by the virus. This latter theory is the favored view of most of the authors already quoted.

The types of lesions described varied but many of them could be fitted into the classification of Dolgopel and Cragon:³

1. Degenerative changes in the cytoplasm of the muscle fibers with some proliferation of nuclei but little cellular invasion.

2. A cellular infiltrate, usually mononuclear, along the muscle fibers.

3. A perivascular cellular infiltration with lymphocytes, monocytes, plasma cells and neutrophils.

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Other lesions frequently described include interstitial edema and subendocardial hemorrhages. Ludden and Edwards⁴ and Weinstein and Shelokov⁵ describe pericarditis.

All authors found the lesions to be focal rather than diffuse. Ludden and Edwards describe a case with minimal myocarditis except in one section of the right atrium where there was marked necrosis and a perforation. Dolgopel and Cragon found myocarditis in only ten per cent of 47 cases where they had only one section to study, but they found myocarditis in 25 per cent of 45 cases with two or more sections. In the two studies reporting the highest incidence six or more sections were studied. We may therefore conclude that the more complete the study the higher the percentage of myocarditis found.

The areas most commonly reported to show myocarditis are the posterior wall of the left ventricle and the posterior papillary muscles.

Most authors agree that the incidence of myocarditis increases with increasing age. Sex seems to bear no constant relationship although some authors report a predominance in males.

Because pneumonia, serum therapy, sulfonamides, and rheumatic fever are all known to cause myocarditis most of the authors make definite statements that these were not significant factors in their series.

The clinical diagnosis of myocarditis in the presence of polio offers almost insurmountable difficulties. Myocarditis is more likely to occur in the severely ill patient with respiratory or bulbar involvement. In these forms of the disease cardio-respiratory symptoms are common. Ludden and Edwards reported cyanosis in 11 and dyspnea in 12 of their 14 patients with myocarditis. Of their 21 without myocarditis 13 had cyanosis and 18 had dyspnea.

Findings which might indicate myocardial involvement are tachycardia disproportionate to the body temperature and age, mitral and aortic systolic murmurs, an enlarged heart and arrhythmias. In 456 cases Geffer found sinus tachycardia in nine, extrasystoles in three, cardiac enlargement in two, and systolic murmurs in 41. Bradycardia has been observed by Ludden and Edwards. At Raymond Blank Memorial Hospital bradycardia was observed three times in the 1950 epidemic.⁶ The significance of the bradycardia has not been determined. An electrocardiogram in one case revealed no abnormalities.

Hypertension is one cardiovascular symptom which has been studied extensively in polio. Grulee and Panos⁷ found hypertension in 51 of 70 cases of bulbar polio but in only seven per cent of the spinal forms and in 12 per cent of the non-paralytic forms of the disease. Weinstein and Shelokov believe that the hypertension is related to hypoxia and that the return to normal can be produced by maintaining adequate ventilation. But Grulee and Panos say, "It has been suggested that hypoxia, in the absence of visible cyanosis may result in com-

pensatory elevation of blood pressure. However, the persistence of hypertension in several instances for several days after continuous administration of oxygen by mask, intratracheally, or by oxygen tent suggests that damage to the cardiovascular centers was the causative factor."

Chart 2

INCIDENCE OF ABNORMAL ELECTROCARDIOGRAMS

	No. of Patients	Number with Abnormal ECG	Per cent Abnormal ECG
Gefter, et al	226	32	14.2
Weinstein & Shelokov	57	14	24.6
Betro, Cibils, Medez	20	4	20.0
Bradford & Anderson	155	20	12.9
Total	458	70	15.3

The reported incidence of electrocardiographic abnormalities is charted in Table 2 and varies from 13 to 25 per cent. Gefter and his associates⁸ found the incidence of electrocardiographic abnormalities to be directly proportional to the severity of central nervous system involvement. Types of electrocardiographic changes reported include arrhythmias, abnormal P-waves, prolonged P-R intervals, slurring of the QRS and abnormal left and right axis deviation, elevation or depression of the S-T segments and flat, diphasic, or inverted T-waves. Bradford and Anderson⁹ reported one case with a right ventricular strain pattern. T-wave changes have been the most frequent abnormality reported.

From August, 1950, to February, 1951, electrocardiograms were recorded on 19 patients hospitalized at Raymond Blank Memorial Hospital with the diagnosis of acute poliomyelitis. Five of these patients were picked at random and 14 had electrocardiograms because of severe disease or tachycardia. The ages of the patients varied from four to 15 years with the average age 10.2 years. There were ten males and nine females.

Eleven of the patients had clinical signs of bulbar or bulbospinal involvement. Three had spinal paralysis with respiratory involvement. Two had paralysis of one extremity. Three patients were considered non-paralytic.

All electrocardiograms were taken with a Smith and Stone Cathode Ray Electrocardiograph. A total of 58 tracings were taken and of the 19 patients, eleven had more than one tracing recorded. Forty-two tracings included three standard and three unipolar limb leads. Fifteen included, in addition, three or more chest leads and one included only the three standard leads. Eighteen of the tracings were recorded with the patient in Drinker or Emerson respirators. In these cases static interference generated by the respirator proved to be a mechanical obstacle and chest leads were not used because of the difficulty in placing the electrodes.

RESULTS

In six patients P-waves were thought to be high and peaked in at least one of the recordings. One patient had a P-R interval of 0.18 seconds with a rate of 96 on the sixtieth day of her illness. Previous

and subsequent tracings showed a P-R interval of 0.14 seconds at rates of 100 to 112.

QRS changes were found frequently but in only three cases were felt to be significant. One of these will be presented in detail later. The electrical axis varied from 12 degrees to 130 degrees. Nine patients had at least one tracing with an axis over 90 degrees. None had a significant left axis deviation.

Chart 3
T-Wave Changes

	Number of Patients	Number of patients with upright T on later tracing
Isoelectric or low T ₁	2	2
Isoelectric T ₂	1	1
Inverted T ₂	3	3
Isoelectric T _{avf}	3	2
Inverted T _{avf}	7	7
Patients with any T-wave change	10	9

T-wave changes were found in ten patients (Table 3). T₁ was isoelectric or of low amplitude in two patients. T₂ was isoelectric in one and inverted in three patients. T_{avf} was inverted in seven patients and isoelectric in three. T₃ was inverted in eleven patients but this was not considered as evidence of abnormality.

All four patients with T₂ changes later had upright T-waves in lead II. All of the seven with inverted T_{avf} and two of the three with an isoelectric T_{avf} had subsequent tracings with upright T-waves in this lead. The patient with the persistently isoelectric T_{avf} is still hospitalized with extensive weakness of peripheral and respiratory muscles. Another patient still hospitalized with extensive paralysis had an inverted T_{avf} shortly after admission which became upright but now is again inverted.

Depressed S-T segments were found in 11 cases and in six it was one millimeter or more. Seven of these later were isoelectric and in two others only single tracings were taken. The depression was found in leads AVF and III in all 11 cases and in lead II six times. Five of these six later became isoelectric.

The Q-T intervals were measured but no significant prolongation could be found using the formula for QTc of Bazett.¹⁰

One death occurred on the polio ward while this study was in progress and autopsy permission was not granted. This patient had symptoms of bulbar poliomyelitis and his death was thought to be due to involvement of the circulatory center. His single electrocardiogram taken on the third day of his illness and two days before death revealed one millimeter depression of the S-T segments in leads II, III and AVF.

The problem of cardio-pulmonary changes in the respirator arose in several cases. One case showed marked electrocardiographic changes.

CASE REPORT

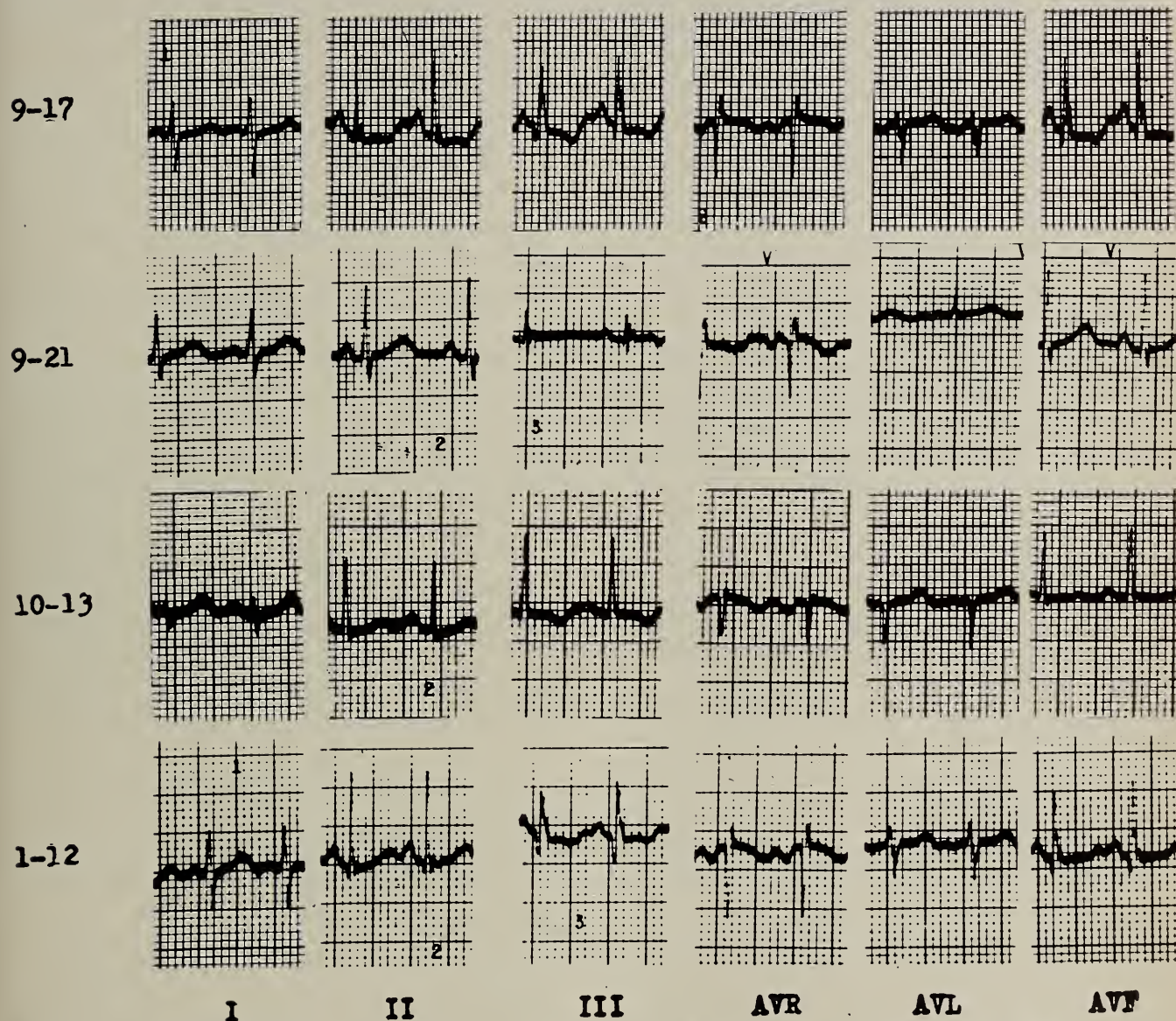
R.R., a four year old white boy was admitted September 14, 1950, with a history of four days of sore throat and headache, two days of nasal voice and inability to swallow and one day of respiratory

difficulty. A tonsillectomy had been done 17 days before admission.

On admission he was comatose with pharyngeal and intercostal paralysis. His disease progressed slowly and 18 hours after admission he was placed in a respirator and a tracheotomy was performed. He remained comatose with no spontaneous movements for 72 hours after which he started to improve.

changed to four and 13. Daily tracings revealed rapid improvement to a normal record on his sixth day in the respirator (Tracing 1, 9-21).

The patient had no extremity paralysis and after three weeks he was placed in a portable respirator. An electrocardiogram (Tracing 1, 10-13) on the thirty-third day of his illness showed some changes and when the patient was removed from the respirator completely these were accentuated. He



Electrocardiograms on a four year old boy with bulbar polio and a tracheotomy. All except the tracing of 1-12 were taken with patient in a respirator. 9-17 tracing shows depressed S-T segments and flat inverted T-waves in leads II, III and AVF. 9-21 tracing is normal. 10-13 tracing and 1-12 tracings show progressive changes in the QRS, S-T segments and T-waves.

The first electrocardiogram (Tracing 1, 9-17) was taken two days after he was placed in the respirator. P-waves were peaked in leads II, III and AVF. There was a small S_1 , a small Q_2 and Q_3 and depressed S-T segments and inverted T-waves in leads II, III and AVF. The S-T segment was elevated in leads AVL and AVR. These findings were interpreted as compatible with acute cor pulmonale. The respirator had been set at 12 centimeters of water positive pressure and 18 centimeters of water negative pressure. This was immediately

was discharged from the hospital, on December 23, 1950, because of exposure to chickenpox. On a return to the outpatient department on January 12, 1951, another tracing (Tracing 1, 1-12) revealed a deep Q_3 and Q_{avf} ; one millimeter depression of the S-T segments in leads II, III and AVF; and an inverted T_3 .

It was felt that this patient's electrocardiographic changes in the last two tracings might be due to chronic pulmonary disease secondary to his inability to keep his trachea completely clear at all

times. It was unfortunate that no electrocardiograms were done before he was placed in the respirator.

A second case showed abnormalities in the T-waves before going into the respirator which cleared completely while still in the respirator after the active stage of the disease had ceased. A third patient had repeated changes in her electrocardiograms long after the active stage of her polio should have passed. Some of these changes could be correlated with what were thought to be episodes of atelectasis.

DISCUSSION

This study was done in order to help establish some kind of baseline concerning the heart in acute poliomyelitis as an aid in therapy. It is not extensive enough to be a valid estimate statistically of either the frequency or severity of myocarditis in such patients. We were unable to draw any conclusion concerning the prognosis for the immediate mortality or the degree of paralysis from the nature of the electrocardiographic abnormalities. We did find data in agreement with the previous reports. We have found ourselves much more alert to the possibilities of heart damage in treating the acutely ill victim of poliomyelitis and have been concerned about the possibilities of myocarditis persisting in those who are convalescing.

The most significant abnormalities found were thought to be the T-wave changes. Switzer and Besoain¹¹ found no T_{avf} under 1.2 mm. in 42 normal children between the ages of five years and 15 years. Yu, Joos, and Katsampes¹² found in 84 normal children between two years and 14 years of age a variation of T_{avf} from four mm. to —.2 mm. but a mean of 1.5 mm. Goldberger¹³ states that the T-wave in AVF may be inverted if there is a significant Q or S. A deep Q or S was found in few of our tracings and the changing pattern of the T-wave in AVF was not associated with a change in the QRS. Of perhaps more significance than the limited statistics on normal children is the fact that nine of the ten patients with T-wave changes later had upright T-waves in those leads.

The cause of the T-wave changes cannot be definitely established. Myocarditis could explain some of our findings. However, one of our cases showed improvement in four hours and then regression by the next morning. It seems unlikely that this would occur with a virus myocarditis especially as it did not follow the clinical course of the patient.

A second possibility is that of a change in the position of the heart associated with paralysis of the diaphragm. Many of the patients had extensive paralysis and this could explain some of our changes, but the QRS axis did not shift significantly in these cases and we found the same changes in non-paralytics and those with only one extremity involved.

Many of our tracings were taken early in the course of the disease when vomiting and anorexia were prominent and electrolyte changes might be

suspected. No attempt was made to do a complete study of this aspect, and we were not able to correlate this possibility with the electrocardiographic findings in more than two or three cases.

Fever was also present early in the course of the disease when many of the tracings were made. Again we were unable to show any correlation and it has been shown that fever has little effect on the electrocardiogram.¹⁴

Drugs were not used except in three cases where 33 per cent glucose solution was injected intravenously.

Although 18 tracings were taken on patients in the respirators, electrocardiographic changes were not produced by placing patients in or taking them out of the respirators. As might be expected there were more abnormal electrocardiograms on patients in the respirators, probably because of their more severe disease. In the case reported in detail we felt that the high positive and negative pressures used when the patient was first placed in the respirator may have impaired pulmonary circulation and may also have caused increased venous return to the heart by pressure on the abdomen and liver. This in turn could increase cardiac dilatation and embarrass pulmonary (and systemic) blood flow and produce the picture of acute cor pulmonale. His electrocardiogram became normal while he was still in the respirator but with mobilization he continued to have some difficulty clearing his trachea and although he had no clinical evidence of pneumonia or atelectasis, the electrocardiographic findings interpreted as compatible with right heart strain gradually returned. This return to normal of the electrocardiogram while the patient was still in the respirator was duplicated in another case. Hence we feel that the respirator, per se, was not responsible for these changes.

Anoxemia occurs in poliomyelitis due to either respiratory or bulbar involvement. It is not unexpected that with such widespread muscular changes that the myocardium should also be affected. It is extremely difficult to assess the efficiency of heart action with such vital central nervous damage, especially with a patient in a mechanical respirator. The lowered oxygen saturation may not only contribute to electrocardiographic changes but may also be increased by a failing heart. Venous pressure studies may have helped in estimating any damage produced by the weakened myocardium itself. They might also reveal instances in which the life saving respirator might endanger the patient by greatly increasing the venous return to an already dilated right ventricle.

In the one case reported in detail and in six other cases the T-wave changes were accompanied by clinical features of the poliomyelitis which might have caused cardiac anoxia. Spain and his associates¹⁵ have pointed out that some other diseases such as Ayerza's disease which is associated with marked cyanosis and dyspnea are not associated with myocardial lesions.

We had no post mortem correlation because ex-

amination was refused on the only death in the 150 admissions to the polio ward while this study was in progress.

In only one case was therapy altered on the basis of the electrocardiogram. Hypertonic glucose has been used in some cases of myocarditis of other etiology with some success.¹⁶ It has also been used in the treatment of bulbar poliomyelitis.¹⁷ In this limited series the effect of hypertonic glucose on the electrocardiogram could not be demonstrated. This possibility warrants investigation.

The problem of potassium in poliomyelitis has been studied¹⁸ and this and other electrolyte studies in polio correlated with electrocardiograms would be of interest.

The relation of anoxemia and hypercapnea to nerve damage in polio has been discussed by Gallo-way and Seifert¹⁹ and others. We feel that anoxemia plays a major role in the electrocardiographic changes in polio but proof of this awaits oxygen saturation studies of arterial blood correlated with serial electrocardiograms.

SUMMARY

Pathological findings in the heart in acute poliomyelitis were reviewed.

Fifty-eight electrocardiograms using unipolar leads on 19 patients with acute poliomyelitis were studied. T-wave changes were found in ten patients (52.6 per cent) and were frequently associated with S-T segment depression. In nine patients these changes returned to normal. One patient had electrocardiographic evidence of right ventricular strain which rapidly returned to normal and recurred while convalescing.

Some of the possible causes for electrocardiographic changes in acute poliomyelitis were reviewed.

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RESPIRATORY DIFFICULTIES IN THE NEWBORN AS RELATED TO OTOLARYNGOLOGY*

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MARSHALLTOWN

THE total infant mortality in the United States in the first few days of life, probably exceeds 120,000 per year, and a major factor in this mortality is asphyxia. Accurate data on morbidity is impossible to obtain, but one may assume that the number must be tremendous and that asphyxia and its complications contribute greatly. In Iowa in 1949, there were 62,908 living births, with 1,258 neonatal deaths; about 1.9 per cent or 20 deaths per 1,000 live births. Further analysis of this data reveals that in the first two days of life, there were 921 deaths or 73 per cent. Immaturity contributes to the largest number of neonatal deaths, followed by birth injury, congenital malformations and postnatal asphyxia and atelectasis. Asphyxia and atelectasis account for about 16.5 per cent of the deaths. There is a good possibility that a few of the congenital malformations produced death by asphyxia, so that conservatively, one may conclude that about one fifth of the deaths in the first two days of life are produced by asphyxia and its related conditions.

In addition, some asphyxia, even though it does not produce mortality, can produce histological alterations in the brain, that will not be immediately evident, but which will be manifested later in life. Schreiber¹ demonstrated the destructive effect of anoxia on the cells of the cerebral cortex, and noted extensive areas of "devastation necrosis" in the brain. These changes were apparently identical to those occurring in other known anoxic states. Darke² analyzed 25,000 deliveries of severely asphyxiated babies and concluded that, as a rule, they are retarded in later life and may show alterations in personality, memory defects, etc.

Disturbances of respiration in the newborn are no doubt the source of more concern among physi-

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cians and produce a greater feeling of helplessness from the aspect of accurate diagnosis and adequate treatment than any other abnormal symptoms occurring at birth. The various pathological entities responsible for alterations in respiration in most instances are probably irreversible, yet there are a few occasions in which accurate diagnosis and appropriate treatment can be life saving. In the past few years, a number of noteworthy publications have appeared which have demonstrated to the obstetrician and pediatrician the aid the otolaryngologist may proffer, and, in addition, considerable attention has been focused on the role of endoscopy in the diagnosis and treatment of newborn respiratory abnormalities. The otolaryngologist, therefore, should be cognizant of the various pathological conditions that can produce anoxia and asphyxia in the newborn, so that a brief résumé of these respiratory abnormalities may be of some assistance to those of us who may be consulted in such emergencies.

Some knowledge of the normal physiology of neonatal respiration is essential. Several observers have conclusively shown that respiratory efforts occur during intrauterine life of animals and that amniotic fluid flows back and forth in the respiratory passages as a result of these respiratory movements. It is supposed that similar conditions exist in the human fetus, although these movements may occur with a closed glottis. Amniotic fluid is therefore regularly present in the respiratory tract of the newborn, and with the initiation of respiration, significant quantities may be aspirated into the lungs. At birth, the lungs are airless and collapsed, but with the advent of normal respiratory movements, the pulmonary alveoli begin to expand. This expansion is a gradual process and some degree of atelectasis is always present; this initial atelectasis may well be considered as physiological atelectasis. Complete expansion may require several days. In the premature infant, incomplete expansion may be present for several weeks, and in addition, there may be areas of incompletely developed unexpandable pulmonary tissue, proportional to the degree of maturity. First aeration is seen in the anterior portions and apices of the lungs, then in the upper lobes, and lastly, the posterior portions of the lower lobes and hilar areas. Radiographic studies of the thoraces of the newborn have been reported by several observers.^{3, 4} A spectacular finding was the difference in radiolucency of the lung fields during inspiration and expiration, even up to ten days of neonatal life. In several cases, films taken in expiration revealed a homogenous increase in density in both lung fields, simulating an atelectasis or extreme hypoventilation, while inspiratory films showed well aerated lungs.

The respiratory tract of the newborn must be ready for immediate function at birth. The air passages must be patent, the alveoli must be capable of expansion, space must be available in the thorax for expansion of the lungs, the thoracic

cage must be rigid enough to permit negative pressure to develop and the diaphragm must be able to move normally.

Fetal anoxia at birth can arise from a wide variety of conditions. The following outline is modified from that of Clifford,⁵ and Potter and Adair.⁶

CHART 1

- Conditions Producing Abnormalities of Respiration
- 1. Abnormalities of central nervous system
 - A. Injury or faulty development of respiratory center
 - 1. Prematurity (immaturity of cells of center)
 - 2. Altered circulation in utero
 - 3. Cerebral anoxia
 - 4. Chemical depression (analgesics and anesthetics)
 - B. Intracranial birth injuries (edema—hemorrhage)
 - 1. Trauma from labor
 - 2. Secondary to anoxia
 - 3. Caesarean Section
 - C. Congenital brain malformations
- 2. Respiratory tract
 - A. Pulmonary atelectasis
 - 1. Resistance to expansion due to cohesion of moist surfaces, together with:
 - a. Injury to respiratory center
 - b. Imperfectly developed thoracic mechanism
 - c. Bronchial obstruction due to aspiration of contents of amniotic sac, mucous, blood, etc.
 - 2. Increased turgor of pulmonary tissue due to congestion, edema and hemorrhage associated with asphyxia
 - 3. Congenital alveolar dysplasia
 - B. Congenital defects
 - 1. Agenesis or hypoplasia of lung
 - 2. Congenital tumor of trachea or bronchi
 - 3. Diaphragmatic hernia
 - 4. Congenital atresia of trachea or bronchus
 - 5. Congenital cysts of lung
 - C. Infection
 - 1. Pneumonia
 - D. Upper respiratory tract
 - 1. Anomalies of larynx
 - a. Cysts—papillomata, etc.
 - b. Decreased glottic lumen (partial atresia; webs)
 - c. Congenital laryngeal stridor
 - 2. Nasal passages
 - a. Persistent bucconasal membrane
 - b. Choanal polyyps
 - 3. Mouth and pharynx
 - a. Hypoplasia of mandible
 - b. New growths (cysts at base of tongue, ranula, dermoid)
 - c. Edema (face presentations)
 - E. Mechanical compression of lungs, trachea or bronchi, arising in thorax
 - 1. Pneumothorax
 - 2. Emphysema; interstitial; mediastinal (Air block)
 - 3. Thymus
 - F. Congenital paralysis of diaphragm
- 3. Circulatory system
 - A. Congenital heart disease
 - B. Vascular anomalies
- 4. Esophagus
 - A. Congenital tracheoesophageal fistula
 - B. Atresia of esophagus
 - C. Paresis of hypopharynx and upper esophagus
- 5. Subdiaphragmatic pressure
 - A. Polycystic kidneys
 - B. Peritoneal effusion
 - C. Intestinal distension
- 6. Biochemical
 - A. Adrenal hemorrhage (Waterhouse-Friederickson)
 - B. Tetany of newborn
 - C. Parathyroid deficiency

ABNORMALITIES OF RESPIRATORY CENTER (Primary Respiratory Failure)

Initiation of respiration depends primarily on an intact respiratory center, and failure as a result of immaturity or injury to the center will result in failure to breathe properly. Depression or failure is usually preceded by alterations of circulation in utero, producing anemia of the brain or cerebral anoxia. Interference with circulation can arise from several conditions, such as early separation of the placenta, cord prolapse, prolonged labor, etc. Cerebral edema and hemorrhage

secondary to fetal anoxia, may directly affect the center, or excess quantities of carbon dioxide in the fetal blood may chemically depress its function. Analgesics and anesthetics administered during labor may cause dangerous depression. Various degrees of atelectasis will be present, and are a result, not the cause of interference with respiration. The diagnosis of primary respiratory failure must necessarily be made by exclusion of all other possible factors.

INTRACRANIAL BIRTH INJURIES

Cerebral edema and hemorrhage produce the greatest number of cases of anoxia. Trauma incidental to labor account for the large majority. The labor need not necessarily be complicated or prolonged. Many precipitous deliveries have intracranial injury. It is interesting that many babies delivered by cesarean section have respiratory difficulties. The reasons may possibly lie in the anesthesia and sedatives necessary in an operative delivery and in altered fetal circulation. Intrauterine anoxia in addition to the possibility of injury to the respiratory center, can give rise to intracranial edema and hemorrhage. If the intracranial assault is severe, the infant may be stillborn, or succumb shortly after birth. Intermittent cyanosis is quite characteristic and the respirations will be irregular in rate and depth. Convulsions frequently occur and the cry is feeble. Chest examination will frequently reveal some atelectasis, which is the sequel to the cerebral lesion. A spinal fluid examination may be of help in arriving at the diagnosis.

PULMONARY ATELECTASIS

The term, "atelectasis" is used rather ambiguously, to designate a collapse or diminution in volume of the pulmonary alveoli or to denote a state of incomplete expansion of the alveolar spaces that have not been previously dilated. When the lung parenchyma of a late premature or full term child is not fully expanded at birth, it is commonly referred to as "congenital atelectasis," "fetal atelectasis" or "atelectasis of the newborn." Congenital alveolar dysplasia is often confused with true atelectasis. This is a condition produced by a lack of lung development, so the lungs at term resemble the lungs of a fetus of five or six months. This anomaly of development will produce a clinical picture that cannot be differentiated clinically from true atelectasis.⁷ Farber and Wilson⁸ state that atelectasis in the normally developed infant must be secondary to factors interfering with the gradual expansion of the newborn's lungs from failure of initiation of respiration or inadequate force of the respiratory effort. There may be (1.) Cohesion of most surfaces of the air passages in collapsed and airless lungs, which offer resistance to the entrance of air and relative-great force is required to overcome it; (2.) Failure of proper functioning of the respiratory center because of imperfect development or injury from

narcosis or trauma; (3.) Poorly developed thorax which is not rigid enough to allow the diaphragm to function efficiently (this is present especially in premature infants) and (4.) bronchial obstruction from excessive aspiration of amniotic fluid or other material.

Only occasionally is bronchial obstruction the complete cause of extensive and persistent atelectasis, although studies have shown that some infants aspirate quantities of amniotic fluid sufficient to produce some bronchial and bronchiolar obstruction. Persistence of an extensive atelectasis is usually due to an insufficient respiratory center, but the effects may be exaggerated by other factors. Severe asphyxia produces marked vascular congestion, hemorrhages and edema, which may effect many organs. In particular, it may render expansion of the lungs difficult, because of increased turgidity of the alveolar walls from edema and congestion, plus extravasation of blood and edema fluid into the lumina of the alveolar sacs and bronchioles. Atelectasis is generally considered to be a constant companion of every variety of asphyxia in the newborn, so it may be a part of other conditions such as intracranial hemorrhage, intrauterine anoxia, congenital vascular anomalies, etc. Of these conditions, cerebromeningeal hemorrhage should be considered as the most important. The local pulmonary phenomena is but a sequel to the center lesion. Whether the atelectasis is a result of a cerebro-pulmonary reflex or whether the central lesion modifies the respiratory rhythm, and indirectly, the pulmonary ventilation, is not known.⁹

The chief symptoms of atelectasis is constant or intermittent cyanosis, similar to that encountered in intracranial pathology, and it may be extremely difficult to accurately separate the two. The attacks of cyanosis become more severe and more frequent, with rapid, shallow and irregular breathing. The heart action, which is fast, gradually slows down, exactly as is encountered in intrauterine asphyxia. Physical findings are difficult to evaluate, since the areas of involved lung may not be large enough to produce the characteristic changes in percussion note and breath sounds. Occasionally fine crackling rales may be heard near the spine at the lung bases. These rales may be missed unless the infant is stimulated to take several deep breaths. Well taken X-ray pictures are essential in the diagnosis. One should not consider atelectasis as an explanation of why a baby does not do well, but as a rule, the inevitable result of poor pulmonary ventilation from extrapulmonary causes.

CONGENITAL DIAPHRAGMATIC HERNIA

The symptoms of diaphragmatic hernia may be respiratory, circulatory, digestive or a combination of all, depending on the number of abdominal viscera in the thorax and on the size of the hernial ring. Cyanosis may be evident immediately after birth and may be transient, only appear-

ing during nursing or crying, or, it may be constant and severe. Vomiting may be only occasional, or follow most of the feedings.

Examination may show rapid respiration and pulse rates, with the heart displaced away from the affected side. Additional physical signs may be absent or distant breath sounds, and intestinal gurgles.

Roentgen examination will usually provide the diagnosis and will reveal air shadows in the pulmonary field, with atelectasis of the overlying lung. These air shadows occasionally may be confused with congenital cysts of the lung or the movement upward of abdominal viscera in paralysis of the diaphragm. Contrast radiography may be necessary to definitely outline the displaced viscera, and iodized oil is the safest because of the danger of aspiration. Surgical repair of the hernia gives generally good results, although large defects in the diaphragm may be difficult to close.

CONGENITAL ATRESIA OF TRACHEA OR BRONCHI

Walman¹⁰ presented a case of neonatal dyspnea in which a congenital narrowing of the tracheal lumen was noted on Roentgen examination. He points out that in taking lateral films to visualize the trachea, it is important to secure pictures in the inspiratory phase, since in the expiratory phase picture, the trachea normally appears contracted. Furthermore, any Roentgen examination of the respiratory tract should include films of both phases of respiration.

LARYNX

Clerf¹¹ and O'Kane¹² and others have recorded cases of respiratory difficulty caused by a small glottic lumen or webs of the larynx. The degree of respiratory difficulty depends on the degree of stenosis. In many of the cases, symptoms do not appear until later in life. Edema of the hypopharynx and larynx can occur from obstetric trauma in face presentations. In a case observed recently, considerable stridor was present immediately after delivery. Direct laryngoscopy revealed diffuse edema of the entire hypopharynx and larynx, with a few submucosal hemorrhages. If the edema is extreme, tracheotomy may be necessary. The existence of cysts, papillomata, or other laryngeal abnormalities can be ascertained by direct inspection.

CONGENITAL ATRESIA OF THE POSTNASAL ORIFICES

(Persistent Bucconasal Membrane)

This anomaly should be considered in respiratory abnormalities.¹³ Severe degrees of asphyxia may be produced by this anomaly, because of the interesting fact that newborn infants will not breathe through their mouths of their own accord. In some instances, dyspnea is only evident while feeding. The patency of the nasal passages should be ascertained in all cases of asphyxia; this can be easily accomplished by passing a small

lubricated catheter or probe into the pharynx. Another method is by blowing air through the nose with a rubber bulb. Lateral Roentgenograms, following the instillation of lipiodol will confirm the diagnosis. Treatment varies with the type of obstruction.

CONGENITAL NASAL POLYPS

A rare, but interesting case of a congenital fibrolipoma in a newborn infant was described by Habeck.¹⁴ This growth originated in the nasal cavity and extended far enough into the pharynx so as to produce partial respiratory obstruction.

HYPOPLASIA OF THE MANDIBLE

Eley and Farber¹⁵ describe this unusual anomaly in four patients. The essential feature of this condition is the diminution in size of the lower jaw, with a retracting chin, so that in profile, the face appears bird-like. A cleft palate is commonly in association. The obstruction is produced by increased motility of the tongue, which falls back into the pharynx over the epiglottis. Treatment is directed toward keeping the tongue and mandible forward by postural measures. The above authors described a simple brace to keep the mandible forward.

MACROGLOSSIA

Several authors have included congenital hypertrophy of the tongue as a cause of respiratory difficulty. This anomaly must be indeed rare, since no reported cases were encountered as far back as 20 years.

Rarely, one may encounter a dermoid cyst, or ranula in the mouth, that may be responsible for the obstruction.

CYSTS ON THE BASE OF THE TONGUE

Shapiro¹⁶ presented a case of this interesting, but rare condition and mentions 12 other cases in the literature. The symptoms are necessarily those of stridorous respirations and cyanosis. Laryngoscopy will reveal the lesion, and treatment is evacuation of the cyst contents. These lesions must be differentiated from a lingual thyroid, which has a more solid appearance.

PNEUMOTHORAX

Studies have shown that spontaneous pneumothorax occurs in about one per cent of the newborn. However, only an occasional case will show respiratory symptoms due to the presence of the pneumothorax alone. Roentgenograms are usually essential for diagnosis. Pneumothorax may coexist with pneumomediastinum and interstitial pulmonary emphysema. Occasionally one will see a line extending vertically near the periphery of the lung that may appear not unlike the edge of the lung. Recently we were confused by the finding of such a line and finally discovered it was produced by a fold of skin on the infant's back.

PNEUMOMEDIASTINUM, MEDIASTINAL AND INTERSTITIAL EMPHYSEMA (AIR BLOCK)

Greenbrier and Cutler¹⁷ called attention to this clinical entity in the newborn. The condition manifests itself by respiratory and circulatory distress. Respirations are rapid and shallow, and cyanosis appears. The veins of the neck become distended and the heart tones are often distant. Occasionally one may hear a crackling sound synchronous with the heart beat, and percussion fails to elicit cardiac dullness. Lateral Roentgenograms are essential for a diagnosis, and will show one or more pools of encapsulated air just beneath the sternum, while the posteroanterior films may reveal patches of air just outside what are considered the lateral margins of the superior mediastinum.

However, if a pneumothorax exists, this sub-sternal air seen in the lateral X-ray may not be mediastinal, but an extension anteriorly of the pleural air. Spontaneous pneumomediastinum is a result of pulmonary alveolar rupture, with subsequent passage of the air along the vascular sheaths to the mediastinum. The air may remain encapsulated, or rupture the mediastinal pleura to produce a pneumothorax, emphysema of the neck, etc. One might conjecture that there might have been failure of expansion in some areas of the lung, with compensatory alveolar ectasia; the rupture occurring through these stretched alveolar bases.

Salmon¹⁸ describes six similar cases, calling the condition "air block" and demonstrated pulmonary interstitial emphysema in all of these cases, but only one showed mediastinal emphysema. However, all six cases had some degree of pneumothorax, and they suggest that interstitial pulmonary air can rupture the visceral pleura to produce a pneumothorax directly.

There is a distinct possibility that this condition may be the precursor of some of the instances of pneumothorax, and that the production of the pneumothorax may be the safety valve that does not allow the interstitial air to ascend along perivascular channels toward the mediastinum.

Treatment is largely expectant, but in case of large air collections, the mediastinum can be aspirated. If a large or tension pneumothorax is present, aspiration is advisable; occasionally, a closed thoracotomy should be done, with a tube connected to an air trap.

THYMUS

Controversy has existed for years concerning the role the thymus gland might play in respiratory abnormalities. Davis and Stevens,⁴ in routine Roentgenologic studies of 702 babies, found marked to moderate hypertrophy in 32.6 per cent. Only a small number received irradiation to the gland and subsequent X-ray studies showed no appreciable change in the size of the gland after irradiation. Capper and Schless¹⁹ comment on the frequency an enlarged thymus shadow is found

and conclude that it depends on the age of the infant, position of the patient when the film is taken, whether or not the interpretation of the X-rays was based on a posteroanterior film or in conjunction with a lateral view, and the phase of respiration in which the film was taken.

From a further perusal of the literature on the thymus, the general consensus of opinion exists that the condition of true tracheal stenosis in the newborn, due to enlargement of the thymus, must be extremely rare. Congenital laryngeal stridor accounts for the large majority of infantile stridor.²⁰ Certainly, the diagnosis of stridor on the basis of thymic enlargement must be made with caution, and all other etiological factors must be investigated before this diagnosis is made.

VASCULAR ANOMALIES

In recent years, several excellent publications have appeared on cardiovascular anomalies of the newborn that may by compression, produce tracheal, bronchial, and/or partial esophageal obstructions.^{21, 22, 23, 24} Holinger and Johnston²⁵ stressed the need of more accurate knowledge of these conditions, since many are now amenable to surgery.

Malformations of the heart, with enlargement, are seen more commonly than any other anomaly. The point of compression will depend on the area of enlargement, but usually it is the left main bronchus that is involved. Various degrees of compression can produce emphysema or atelectasis.

Anomalies of the aorta and its main branches consist essentially of persistence of the embryonic right fourth aortic arch, together with a variety of anomalies of the left aorta, arteries of the neck, especially the subclavian, and sometimes of the ductus arteriosus or ligamentum arteriosum. The left aortic arch may be partly or wholly suppressed, or it may fully persist, producing a double arch. Dysphagia is produced by compression of the esophagus by the right aortic arch, as it passes behind the esophagus in its course toward the descending aorta. Occasionally, the right and left aortic arches are connected in front, as well as behind, forming a vascular ring around both the trachea and esophagus. Dysphagia and tracheal compression are manifested by noisy breathing, which is accentuated by feeding and exertion.

Posteroanterior and lateral Roentgenograms in both inspiratory and expiratory phases of respiration are of prime importance. A widened mediastinal shadow extending mostly to the right should arouse suspicion of the condition, and may be mistaken for an enlarged right lobe of the thymus. Thymic hyperplasia is apt to be diagnosed from a broad mediastinal shadow and a history of stridor. This diagnosis should not be accepted until a congenital vascular anomaly has been excluded. Often the normal aortic arch is not seen on the left. Occasionally, right and left oblique views may show the aorta ascending on the right and

passing behind the esophagus. Forward and lateral displacement of the trachea and esophagus may be seen. Narrowing of the trachea at the site of the constricting vascular ring is a prominent feature. Additional information can be obtained by a barium or lipiodol examination of the esophagus, which may show an indentation on the lateral or posterior surface, produced by the aortic arch, which carries the major blood load. This defect can occur on either side.

At times, the X-ray studies may not be conclusive, and bronchoscopy may have to be performed to exclude other possible causes of tracheal obstruction.

ESOPHAGUS

Abnormalities of the esophagus, either structural or functional, can produce episodes of respiratory difficulty which usually are more severe during feeding, on the basis of overflow of esophageal and pharyngeal contents into the larynx.

Congenital atresia and tracheoesophageal fistulae are quite rare. Levin and Lannin,²⁶ in 1945, encountered more than 400 cases in the literature, and described six types of anomalies: (1.) Simple atresia; (2.) Obstruction due to a membrane; (3.) Upper segment of the esophagus ending in a fistulous tract, entering the trachea just above the bifurcation of the trachea and the lower segment, ending in a blind pouch; (4.) Direct fistula into the trachea and no atresia; (5.) Both upper and lower segments of the esophagus entering the trachea through fistulous tracts and (6.) Congenital atresia of the esophagus, with the lower portion entering the trachea. The mortality in these conditions was, until recently, almost 100 per cent, but the recent brilliant advances in surgery of the esophagus has reduced this mortality.

The symptoms are characteristic, and consist of the appearance of large amounts of frothy mucus, which gradually fills the pharynx, producing respiratory interference. Should a fistula exist, from the upper esophagus into the trachea, the asphyxia and pulmonary symptoms will be severe.

Abnormalities of function, such as paresis and paralysis, can produce esophageal obstruction. A case was seen recently, because of recurrent attacks of cyanosis, which were more severe at the time of feeding. Examination revealed excessive amounts of mucus in the lower pharynx. A large catheter was easily passed into the stomach. A roentgenogram with the use of iodized oil demonstrated the accumulation of oil in the pyriform sinuses and the malfunction of the esophagus. The infant was fed by gavage and the pharynx kept clear by suction and gravity for a week or so, and gradually the function of the esophagus returned to normal.

I feel that in any case of neonatal asphyxia, in which a definite diagnosis cannot be made as to the cause, a catheter should be passed into the stomach to demonstrate a normal esophageal

lumen, and if there is any doubt, lipiodol studies should be performed.

PARALYSIS OF THE DIAPHRAGM

Diaphragmatic paralysis in the newborn is attributed to obstetric manipulation and usually is associated with a brachial palsy on the same side. The time of the onset of the paralysis varies, but usually appears during the first day. Gradual appearance of respiratory difficulty, with varying degrees of cyanosis, and a rapid irregular type of breathing, are the main symptoms. Examination will reveal a decreased expansion of the chest on the paralyzed side and lack of inspiratory bulging of the abdomen. Roentgenographic examination will show a high diaphragm and some atelectasis on the side of the paralysis, with the heart displaced toward the affected side. Fluoroscopic is important, as stressed by Tyson and Bowman¹⁰ who describe the diagnostic paradoxical "see-saw" movement of the diaphragm, or the Kleinbock phenomena, where the paralyzed side ascends during inspiration, while the opposite side descends. During expiration, the paralyzed side descends and the nonaffected side ascends. The majority of these cases recover, and the only treatment is supportive measures and careful feeding.

It is not in the domain of this paper to discuss the routine resuscitatory procedures, such as clearing of the pharynx of secretions, external heat, administration of oxygen, etc., which are part of the normal routine of delivery, and are an essential part of the therapeutic armamentarium of the physician who assumes responsibility for the delivery. However, many are not experienced enough, or are unwilling to attempt tracheobronchial aspiration, although such a procedure should be routine in serious resuscitation problems. The first consideration of the consulting otolaryngologist should be one of appraisal of the situation in an orderly manner, so as to arrive at an accurate diagnosis. Inquiry should be made into the obstetrical history, which should include abnormalities of delivery, evidence of intrauterine asphyxia, anesthesia and analgesia, etc. Careful inspection of the upper respiratory tract should be done to exclude pathology in this area. One should ascertain the patency of the nasal passages. Roentgen studies of the lungs and cardiac silhouette are essential and should be done unless the general welfare of the baby is precarious.

The possibilities of congenital heart disease, vascular anomalies, intracranial pathology, etc., should be ruled out by the referring physician. The otolaryngologist should be prepared to inspect the larynx by direct laryngoscopy. This is easily done with an infant laryngoscope of the Jackson or Flagg type. It is generally agreed that aspiration of the tracheobronchial tree is indicated in practically all cases of severe asphyxia. Aspiration is simply done by passing a small number

eight catheter through the laryngeal aperture with special forceps. The catheter should be quite new, so as to have some rigidity, and the aspirating end should be prepared by cutting off the end at a 45 degree angle and making small holes in the sides near the end, to provide lateral suction. Some prefer a large ureteral catheter with cylindrical tip, multiple openings on the sides, and an oblique end. Small woven silk catheters are easy to insert because of their rigidity and are sufficiently flexible to be able to enter both bronchi without trauma to larynx or bronchial mucosa. A rigid aspirator may be used, such as the rubber tipped Samson aspirator, but the possibilities of trauma to the larynx are greater. With skilled use of these aspirators, one may safely and quickly clear the trachea and main bronchi of secretions. Symptoms pointing to possible esophageal obstruction should be investigated by passing a small catheter through the esophagus. Confirmation of any abnormal findings can be secured by the use of contrast radiography. Iodized oil is the safest to use because of the possibility of possible spilling into the larynx from overflow, or the presence of a fistula into the trachea.

The application of endoscopic procedures in the newborn is past the experimental stage and bronchoscopy of the newborn is now regarded as essential in certain conditions. The routine use of bronchoscopy in all cases of asphyxia is to be decried and the endoscopist should undertake this procedure only when he is quite certain that such a procedure will materially relieve the asphyxia or will aid in diagnosis. Recently, several excellent articles have appeared on endoscopy in the newborn.^{27,28,29,30} However, a careful appraisal of the cases reviewed in these publications reveals the fact that in the large majority of instances, no real benefit was derived from the procedure, although certainly it would appear that no harm was done to the infant. The indications for bronchoscopy in the newborn are at present not well defined, but it is only through the experiences of these, and other men in the future, that the indications and contraindications will be evolved.

CONCLUSION

1. Asphyxia in the newborn accounts for a substantial number of deaths each year. Many of the pathological conditions producing asphyxia are irreversible, but accurate diagnosis and adequate treatment may reduce this mortality.

2. Several conditions producing asphyxia are in the domain of the otolaryngologist, who should be acquainted superficially with the general subject of newborn asphyxia.

3. Conditions producing abnormalities of respiration in the newborn have been presented.

4. The role of the otolaryngologist in the diagnosis and treatment of asphyxia in the newborn is becoming increasingly more important. It is hoped that more of us will direct our attention to this interesting portion of the field of otolaryngology.

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ADDRESS
AT THE
CONVOCAION OF THE COLLEGE
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JUNE 7, 1951

MARK F. BOYD,* M.D.
TALLAHASSEE, FLORIDA

I regard acceptance of an invitation to deliver the address on the occasion of this independent convocation of the College of Medicine of the State University of Iowa as an obligation to his alma mater which an alumnus cannot evade, even though thereby he is accorded recognition far in excess of any justification afforded by his own modest attainments. I am humbly grateful for the honor.

This occasion inevitably recalls memories of a morning, 40 years ago, when members of the class of 1911 were similarly the focal point of interest. Forty years is a lengthy period in the human life span, I am sure none of my classmates in that year had attained such an age, and I feel reasonably certain that in the case of members of the present class, few if any of the romances of which they are the fruit had as yet flowered. A similar period in relation to my own class would go back to 1871, a year sufficiently remote to emphasize to me at least, the length of this interval. Time has wrought many changes: I am not aware how many of our former teachers still survive, although our honored and beloved Dr. John T. McClintock, still connected with the institution, is our only link with the valiant faculty who strove to model our none too plastic clay into some semblance of members of an honorable profession. Likewise the classroom, laboratories, and wards which you frequented in the course of your training course, are to me at least, wholly unfamiliar. The edifices which we haunted still survive on the campus, although now dedicated to other uses than the training of medical students. I wonder whether a patient listener might still detect lingering echoes within their walls of *My Bonnie Lies Over the Ocean*, *Sweet Adeline*, or *Lydia Pinkham*. I recall an occasion when I studied the carpet in the Dean's office because of an involuntary bath taken by a recalcitrant freshman in the fountain which once graced the intersection of Iowa Avenue and Dubuque Street. There were other escapades to which I only venture to allude on the assumption that the statute of limitations now operates as a bar to their investigation. It is conceivable that escape from disciplinary action may have been the consequence of a

charitable blindness on the part of the authorities. Then, as I presume is still inevitably the case, the faculty required our diligent application to absorb at least the minimal knowledge requisite to meet rigid standards. With the vast increase in scientific knowledge in medicine and related fields during the intervening years, it is difficult for me to comprehend how you have succeeded in meeting requirements which I am sure are none the less rigid than they were in our undergraduate days. You merit the hearty congratulations of all those gathered to do you honor. Although I can vividly recall the appearance and personality of our old teachers, their impression on my own plastic clay varied materially. I acknowledge with pleasure my obligation to the tutelage of that able clinician and cultured physician, the late Campbell Howard, to "Johnny Mac" for indoctrination in the importance of meticulous attention to detail, to the late Henry Albert for substantial and sympathetic encouragement of interest in the fields which I later cultivated, in preventive rather than curative medicine. Despite the intensive application which this recital implies, I nevertheless found sufficient time to satisfactorily and successfully prosecute my own romance with an Iowa City girl. Yes, those were happy days, and I am certain that despite the possible nostalgic distortion of retrovision, they were better days, days of less tension and turmoil, when we were more self-reliant and self-disciplined and did not feel the pressure of an expanding paternalistic and authoritarian control.

When I belatedly realized the enormity of the responsibility I had assumed in accepting the invitation to speak on this occasion, I asked a discerning friend what I should speak about. I was deeply impressed by his sapient reply, "Speak about 20 minutes"; I mention his words of counsel in order to reassure you that my contribution will not monopolize this program.

The changing times have brought our profession face to face with a situation which, if it materializes, will change the fundamental character and pattern of practice. I allude to the so-called socialization of the practice of medicine. Realization of this situation would regiment practitioners of our profession into cogs of a vast and intricate bureaucratic machine, operated on fuel provided by a system of compulsory insurance forced on a people already staggering from a merciless tax burden. The circumstance that the idea has found some able and adroit support in political circles indicates it is attractive to certain influential lay groups. Insofar as I am aware, never before in a free society has it been proposed that any independent and highly trained professional or occupational group either voluntarily surrender, or by legal enactment be deprived, of the right to autonomously determine and control the circumstances and conditions under which such practice is exercised. Strangely enough some of the strongest support for this movement has come

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from labor groups whose aggressive promotion of their private interests has contributed materially to the strains and stresses of the present day. The idea is repugnant to physicians in general and has aroused an opposition which in determination and militancy never previously has been exhibited by the profession. The subject in its personal aspects has not been of vital concern, as the conditions of my earlier professional activities, and my present retirement, have set me somewhat apart, but I am none the less sympathetic with the attitude of the profession. Perhaps thus placed in a position of detachment, I can view the problem more objectively.

In view of the circumstance that an ancient professional precept, still widely accepted and faithfully observed by the profession, counsels the physician never to withhold his services from the uncompensating necessitous, it is unfortunate that most of the lengthy discussions and voluminous arguments over the question have dealt with its economic aspects, with the implication that the physician himself is overcompensated. No other profession or occupation ever has so consistently and consciously contributed its services, uncontingent upon anticipated remuneration. It is likewise incontestable that the physician's compensation is not substantially contributing to the mounting cost of medical care, but that this largely arises from expanding facilities required for the scientific care of patients, or the provision of secondary services. The proponents of socialized medicine have stressed *quantity* medical care, extended to the entire population. The experience of our British friends shows that this is attained with the sacrifice of *quality*. Our profession can never accept a position that tolerates the slightest deviation from the highest standards of quality. The most notable contribution which the profession has so far made toward the solution of the quantity phase of the problem, is the support of voluntary programs of sickness and hospital insurance for the relief of those of moderate and low incomes. However, physicians themselves are weakening this program through approval of unnecessary hospitalization. I will not pursue this aspect further, not only because of my own inadequacy to do it justice, but because it is unrelated to another phase which I desire to discuss.

During the greater part of my professional career, I have had an intimate connection with health departments, usually on the state level and am not yet wholly dissevered from such a connection. Up to 10 or 15 years ago, the programs of these departments throughout the country, were limited to what is more or less conventionally regarded as the field of public health, the promotion or execution of measures whose successful application can only be achieved through community effort or the control of individuals whose condition or status imperils others. Imperceptibly some of these programs are being en-

larged to deal with such matters as the treatment of syphilis, mass diagnosis of diabetes, cancer, cardiac conditions, etc. Even though many of these programs have been developed in consultation with, and have secured the approbation of the organized profession, voices of those who entertain the opinion that these provide an insidious opening wedge for state medicine have not been mute. It is my conviction that a valid distinction can be made and must be recognized, between what is ordinarily considered the field of public health and that which constitutes preventive medicine. Although the latter may be considered to embrace the former, definite lines of distinction exist, which should not be overlooked or ignored. Public health is a proper field for government agencies. The medical profession itself, should exercise the practice of preventive medicine.

Disease prevention now commands greater attention from practicing physicians than ever before. Current medical students are more thoroughly trained in such technics than were those of previous generations, but it cannot be denied that the accomplishments in this field which can be credited to the organized profession are not keeping pace with either demand or increasing opportunity. Opportunities increase substantially with expanding medical science. Physicians now generally recognize that the extensive application of such technics does not jeopardize the demand for their services in curative medicine. However, the potential public benefits from the practice of preventive medicine are directly proportional to the extent to which their application is made available to all members of a community. It is this consideration more than anything else, which has resulted in the developments mentioned in the program of health departments since they possess facilities for readily reaching most members of a community.

So far the general reaction of the profession to the threat of socialized or state medicine has largely been defensive, and as a consequence, there has neither been evoked sufficient strength to permanently silence the proponents of state medicine, or adequately stimulate the popular support of the profession which the humanitarian services of its practitioner's merit. Organized medicine should and must assume a more positive program and policy, recognizing that the laity expects the profession to exercise more active leadership by extending the benefits of preventive medicine to the entire population. It must be recognized that the agency or organization which effects this will receive the credit, and if through apathy of the profession, health departments are induced by pressure of lay groups or obliged by statutory enactment, to assume this responsibility, the health departments will receive the credit for the resulting benefits. Since these essentially operate with public funds, the consequent satisfaction of the public would strengthen the position of the proponents of state medicine.

Successful operation of a health department in the absence of state medicine, is impossible without the collaboration of the medical profession. The discrete health officer will discuss with the profession all contemplated innovations in the program of his department and secure assent and assurance of cooperation before their introduction. While I have found the profession unvaryingly willing to support measures for the public good, it should be alert to the range of its own responsibilities and not acquiesce in the development of situations which will tend to diminish its own opportunities and prestige.

The threat of state medicine has closed the ranks of the profession so that it exhibits a solidarity never before attained. It is my hope that the united profession will recognize the strength of a positive attitude toward the increasing public obligations presented by preventive medicine. I cannot present a blueprint for the attainment of this position, but it is my conviction that a solution will require the maintenance and strengthening of the existing solidarity and a diminution of the individualism, either of personality or activity which has heretofore commonly characterized practitioners.

Since adequate consideration of this topic would prolong my address to lengths which would try your patience and since furthermore there is another subject which I wish to discuss with equal brevity, I shall dismiss the theme of preventive medicine.

The exacting profession to which you are about to receive admission, has immemorially been characterized as the practice of "the science and the art of medicine," an expression of duality whose significance has unfortunately been increasingly slighted during the past century, more especially in recent decades. It is likely that when the expression, "the science of medicine" originated, it embraced lore gathered over centuries by our professional predecessors. It was a heterogeneous accumulation of facts based on close and shrewd observation, mingled with opinions derived from uncertain experience based on the haphazard or unsystematic consequences of trial and error. Insofar as it purported to be based on experience, it was known as empiricism. Although much if not most of this lore is no longer regarded as factual knowledge, it is to be regretted that physicians, to their cultural loss, have so generally discarded or disregarded the writings of their early predecessors. The greatest and the insuperable defect of this "science" arose from the unquestioned acceptance of the opinions of the unrecognized leaders, so that in blind obedience to the dicta of authority, the desire to observe was stifled and facts were denied recognition. When men finally began to question dogma, as well as statements not verifiable by independent observation, the fundamentals of our profession underwent a basic change. Although medicine thereby did not become a science, as we understand that

word today, it did become the source from which the sciences of anatomy, physiology, pathology, and others evolved and developed. By the time Virchow established the principles of cellular pathology, the revolution was complete. Thereafter the application of experimental methods to the study of morphological, physiological and pathological problems resulted in a rapid and ever increasing accumulation of facts and objective data relating to these sciences. As is inevitably the case, the solution of one problem immediately poses new questions for solution by active minds and consequently the field of inquiry is constantly enlarging, with no detectable limit to the broadened horizon. As undergraduates you have been instructed in the fundamentals of these sciences derived from medicine. You have been indoctrinated with their significance and application in the interpretation of human pathology. You have been trained in a diversity of scientific technics to gather objective data required for diagnosis. Modern medicine is the focal point of the application of various sciences to the elucidation of pathological processes, it is scientific in concept and methodology, but we must conclude that of itself it does not constitute a science.

We may next give consideration to the significance of the "art of medicine." It may as well be confessed at the outset that we are attempting to weigh the less ponderable element of our duality. To say that it expresses the application, or employment, of the principles which constitute the science, is to reduce its practice to the level of a technic. Neither is it the trained dexterity with which the surgeon wields a scalpel or the acumen with which a neurologist localizes the site of an organic lesion of the central nervous system.

Training in scientific medicine may conceivably so focus our attention intensely on disease, that we overlook the patient in whom it occurs. Life in the artificial environment produced by civilization has dulled many of the senses which we, in common with other animal species, are endowed, yet that civilization has been made possible by the higher cerebral development which characterizes the human species. In power of reasoning, as well as in imagination, mankind excels, for good or evil, other contemporary species. These, regardless of how quickly they react to fear, readily become placid and tranquil in the absence of alarming stimuli, nor do they, in the absence of exogenous trauma, exhibit much evidence of sensibility to pain during the course of an illness. Human sensibility to pain appears much greater, and human imagination can produce a multitude of mystifying effects.

It appears incontestable, although the subject has received little attention, that the central nervous system and the other organs and tissues of the body, reciprocally influence each other, in a manner wholly apart from their normal and generally recognized physiological relationships, so that disease or dysfunction in one, may adversely

affect the activity of others. Some recognition of this circumstance is afforded by the dictum, that the physician must not only treat the disease, but the patient as well. In my opinion this statement embraces the essence of the "art of medicine." Heretofore those who have been most successful with the art, have acquired their skill empirically. Of recent years considerable attention is being given to scientific exploration of this field, to which study the term *psychosomatic* medicine is applied. In my opinion, this is merely a fancy name expressive of the art of our profession.

Much of your practical training in the basic sciences involved observations made on experimental mammalian subjects. With several of these species, animals of comparable age and weight may be expected to react in a highly uniform manner when subjected to an identical challenge. This similarity in reactivity has permitted the employment of a series of such animals in various quantitative determinations, for which chemical methods are not available. Although crude in comparison with the latter, the circumstance that with any number of duplicate trials, the results will closely approximate each other, is indicative of the homogeneity of the species of the subject animal. Even your present limited clinical experience has probably been sufficient to afford instances where two or more patients subjected to identical procedures have reacted in a dissimilar manner. This should impress on you that the patients who will come under your future care are highly heterogeneous when considered from the standpoint of practically any characteristic. Successful practice then, demands that you be aware of the individuality of each patient.

The performance of experimental work requires a detached and impersonal attitude on the part of the investigator, in order to avoid possible influence of personal bias in the interpretation of results. The acquirement of a scientific attitude, so necessary in the conduct of, and critical appraisal of experiments, must not be permitted to dominate your attitude to patients. An impersonal attitude at the bedside, with its implication of chilliness, is resented by most patients, who expect their physician to exhibit sympathetic concern over their problem. Patients are reluctant to place their confidence in a physician they regard as unsympathetic.

Mastery of the "art of medicine" is therefore more difficult than acquirement of proficiency in scientific medicine. It has not been taught as a subject of formal instruction, and those who have become adept, probably owe their ability more to precept and intuition than to instruction. I have seen it more often exhibited by the lowly, harassed and overworked general practitioner than at any other level of the profession. It is likewise

the most difficult phase of the profession for the novice to appreciate.

When you observe the face of a layman light-up and hear him exclaim, when a certain doctor's name is mentioned, "Yes, He is MY doctor," you may safely infer that this doctor has mastered the art of our ancient profession.

To you, gentlemen, members of the Class of 1951, who are about to join the body of alumni of the College of Medicine, I can offer assurance that you will always have satisfaction and pride in acknowledging you received your training in the University of Iowa. The painstaking instruction of the faculty, and the solid professional abilities of the graduates who have preceded you, have given our school a prestige the equal of any institution. In my opinion, it is excelled by none. May you do your part to maintain this prestige.

MEDICAL SCHOOL NEEDS

Recently the Surgeon General's Committee has reviewed medical school needs. They have reported that the unmet needs could be financed by the expenditure of about \$40 million a year more than medical schools are now spending for education and research. This estimate is based on the amounts cited by the medical schools. This figure may be substantially discounted as representing the wishes and aspirations of those who have a sharp interest in securing additional funds. Nevertheless there is no doubt whatever that the additional annual income required by medical schools to perform their functions adequately is measured in tens of millions, and not millions of dollars.

It should be borne in mind that the medical schools could not absorb an additional \$40 million a year immediately. This figure is a general measure of the level which operating expenditures of medical schools should rise over a period of years.

It is quite significant that \$30 million of the additional funds needed a year is required by private schools and \$10 million a year by public schools.

The needs of the public schools must, if existing patterns are followed, be met by appropriations from states and cities, for these schools receive three-fourths of their revenue from these sources. They obtain only 17 per cent of their revenue from tuition and fees, five per cent from gifts and one per cent from endowment.

So far as private schools are concerned, roughly 25 per cent of their income comes from parent universities, another 25 per cent from tuition and fees, about 20 per cent from current gifts and grants, another 20 per cent from endowment income and about 10 per cent from miscellaneous sources.

An increase in gifts may meet part of the need, but certainly not the total. It is therefore even more urgent and apparent that all physicians contribute to the American Medical Education Foundation.

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You and Your AMA

Several medical journals have carried articles recently about a physician's responsibility to his national organization and why he should support it rather than resign. The collection of membership dues has lagged in some of the eastern states and has evidently been much more of a problem than it has here in Iowa where our percentage of paid members ranks high.

Nevertheless, the comments made in those areas are valid here and bear repeating. We owe our support to our national organization even if we disagree with some of its statements or policies, just as we owe our support to our government regardless of whether we agree with all of its policies. We should exert our influence from the inside, rather than gripe from the outside. We cannot resign from the government, nor can we refuse to support it financially, much as we might like to when our tax burden seems especially onerous.

Ours is a democratic organization and can be changed if the majority is in agreement about the necessity for it. The structure of the AMA has changed greatly in the past ten years. Until recently it had no Council on Medical Service or public relations program. The philosophy expressed in its *Journal* a short ten years ago was, in many instances, diametrically opposed to today's philosophy. Change is possible; progress can be made; new philosophies can be adopted and supported. All of this is more easily accomplished, however, by workers within the organization rather than by critics on the outside.

One more point should be added, in all probability, and that is the necessity for expressions of

opinion. Make your ideas known to those who represent you in the House of Delegates, so that they may be guided by the preponderance of opinion in the state.

Mr. Ewing Again

Mr. Oscar R. Ewing had a press conference June 25, 1951 at which time he issued a statement regarding a new proposal which verifies his determination to start the nation on a health insurance program. He has recommended that the President include in his legislative program a plan which would provide hospitalization insurance up to 60 days a year for persons 65 years and older and dependents of deceased persons insured under the Old-Age and Survivors Insurance system.

His reason for this proposal is that these people as a whole need much more than the average amount of hospitalization, they have much less than average income with which to meet the costs of hospitalization and much less than average opportunity to obtain private insurance. The proposed benefits would give them, through their own contributory insurance system, badly needed and valuable hospitalization insurance. It would protect them against having to ask for private charity or public aid with which to pay hospital costs and would reduce Federal, State and local expenditures for public assistance. It would also reduce the deficits of hospitals that have to furnish free or part-pay services.

Mr. Ewing believes that the full cost of these hospitalization benefits can be paid out of present social security payroll deductions; hence these do not need to be increased and no general tax money is required. He also claims that specific provisions would be made for maintaining the confidential character of the records concerning any patient. He does not state just how this may be done.

President Truman recently reported that 75 million Americans have no health insurance. It this statement indicates that the other 75 million do have some protection against the mounting costs of illness, the gain has been enormous. When the first Compulsory Health Insurance Bill was introduced in Congress in 1939, fewer than three million persons were enrolled in the Blue Cross Hospital Service Plan. Today that enrollment is in excess of 40 million. Commercial and accident insurance companies have also added many millions of people who are taking advantages of the prepayment principle to meet the cost of hospitalization and medical care. It would seem appropriate that careful and searching consideration be given Mr. Ewing's latest grandiose scheme before this legislation is allowed to become a law.

Cancer Research

It is gratifying to note the progress being made in our knowledge of the cause of cancer. Old avenues of study such as "morbid anatomy" and

"clinical course" have become gutted with use and have ended in blind alleys. New super-highways are traversing the unknown lands of the physiology and chemistry of the cancer cell. The April, 1950 issue of *Cancer Research* lists no less than 160 cancer exploratory projects in the United States. Little by little the brush is being cleared away from the shoulders and new pavement is being laid down, carrying us closer to the cause of cancer.

Some of the blocks used in the new pavement are: (1) alteration of the growth of cancer by administration of hormones, (2) study of hormone excretion in cancer, (3) measurement of uptake and turnover of radioactive elements by the cancer cell, (4) detection of altered coagulation, flocculation, and oxidation ability of the blood of cancer patients, (5) electrophotometric fractionation of blood proteins in cancer, (6) study of alterations in fat metabolism in cancer, (7) study of enzyme production and inhibition by cancer tissue, (8) study of carbohydrate metabolism in cancer tissue, (9) study of the submicroscopic particles in the living cancer cell through use of the electron microscope, and (10) use of chemical compounds in production and therapy of malignant growth.

Though our goal has not yet been achieved, the summit will be reached someday, and the abnormal chemical structure and metabolism of the cancer cell will be known. The road to the attack of the cancer problem at its origin will then be down hill. With all these eager investigators at work, the cause of cancer may yet be found in our lifetime! God bless the research worker!

Use of Isotopes

In conjunction with the rather rapid progress which has been made in further development of atomic energy bombs, it is interesting to note that we are also indebted to radioactive isotopes for new means to study body processes. Medicine has been given a new tool with which research of a type unknown previously can be conducted. Considerable progress has been made utilizing this material in the laboratory in the Department of Medicine at Iowa City. Research laboratories in most of the states and 27 foreign countries have been furnished radioactive and stable isotopes by the Atomic Energy Commission at Oak Ridge.

The farmer, also, has reason to be grateful for the Department of Agriculture has been working on the effect of fertilizer on the growth of plants abetted by the use of radioisotopes. This has resulted in further information on the mystery of photosynthesis, whereby a plant can take the gases

of the air and build them into starch, sugar and blood.

With the aid of these isotopes, scientists have studied how much of certain trace elements our bodies contain, how blood is made, how much iron we need to remain in good health, how and why mineral salts are lost after severe injury, how protein is built up from amino acids, how fats are "burned" by oxidation and the effect on this process of certain drugs and diseases, such as diabetes. The radioisotopes have also been helpful in the diagnosis and treatment of some cancers and in relieving the pain and distress that accompany angina pectoris and congestive heart failure.

It is not beyond the bounds of probability that mankind may yet derive real benefit from such peacetime use of a most valuable tool for human progress.

PROTECT BLUE CROSS AND BLUE SHIELD

On the athletic field the "rules of the game" are interpreted in the spirit of sportsmanship and fair-play. In civilized community living the medical profession has a code of conduct. The penalty for violation of this code falls squarely upon each one of us, ultimately. The "umpire" is public opinion.

From time to time the premium rate on your casualty and liability insurance has been raised because premiums became insufficient to pay the claims. This also applies to Blue Cross and Blue Shield. That is why a dollar needlessly and uselessly expended from the premium income of both these organizations inflicts a direct and tangible injury to all plan members, and ultimately to the free enterprise principle in our society.

A patient enters a hospital only upon the direction of the doctor and is discharged from the hospital only on the direction of the doctor. Therefore, the medical profession largely controls the financial status of Associated Hospital Service and United Medical Services.

Included among excesses are: (a) Patients admitted to hospitals for diagnostic X-ray and laboratory work-ups by some physicians, even though they know such patients are not entitled to this type of coverage under the Blue Cross Plan; (b) Needless days spent in the hospital beyond those reasonably required for treatment and (c) more X-ray and laboratory examinations than are necessary for treatment.

A voluntary prepayment hospital plan and a voluntary prepayment medical plan are the only remaining bulwarks in our society against compulsory health insurance. Your future—as a physician with freedom of choice—is entirely in your hands.

President's Page

Many physicians in the state have made inquiries concerning the Procurement-Assignment set up. This was explained in the editorial pages of the *Journal* in the October, 1950 issue; however, that was written at the inception of the program. In the appointment telegram from Washington, the undersigned was named as Chairman of the State Advisory Committee, with Dr. Walter L. Bierring and Dr. Joseph B. Kennedy, a dentist. Further instructions were to complete the organization within the state as rapidly as possible. To that end, in consultation with key members of the Society and the personnel of the State Office, Deputy Advisors were appointed for each county. These individuals for the most part were World War II veterans who, we thought, could more clearly know the picture of physicians in service.

The work has been heavy, for the National Committee, the so-called "Rusk" Committee, has been thorough in its attempts to reach all Priority I and II—those physicians trained wholly or in part at government expense. Our greatest difficulty has been in evaluating the needs of hospitals in their intern and residency programs. It is estimated that these institutions should be expected to take a 15 per cent cut in medical personnel; however, this cannot be made uniform for all hospitals. Further regulations state that a graduate (if he is an ASTP or V-12 trained man) may complete his year of internship or complete the current year of residency. At this point he is expected to enter service. Exceptions are in the critical specialties of urology, orthopedics, psychiatry and laboratory field. These residents may be granted an extra year of training.

The other difficult problem is that of essentiality to a community. In this regard I must rely greatly on the integrity and judgment of the County Advisor. All too often the citizens, feeling that their doctor is all-important to them, ply us with requests for his deferment. It must be remembered that primarily the government trained physician has an obligation to his country and that it is the community's responsibility to secure a replacement for him. It seems certain that the patient load will not again be such as was existent during the last war.

I should like to thank the County Advisors for their fine work—it is difficult, and the reward is only the knowledge that they are doing a worthwhile job. May I ask that the profession at large give wholehearted support to this program.

A handwritten signature in dark ink, reading "Donald H. Young". The signature is stylized with a large, looped initial "D" and a long, sweeping underline that extends to the right.

President

Minutes of the House of Delegates

to the

American Medical Association

The House of Delegates of the American Medical Association met six times during the annual meeting of the Association held June 11 to 16 in Atlantic City. Two hundred out of 201 delegates registered during the course of the session. Two delegates from the Student American Medical Association attended not only the meetings of the House but also some of the reference committee meetings.

Dr. Allen O. Whipple won the Distinguished Service Award. This was the first order of business, and it was followed by an announcement by Dr. Louis H. Bauer, chairman of the Board of Trustees, that the American College of Radiology had contributed \$2,000 to the National Medical Education Foundation and had urged its members to make individual contributions. Later in the meeting he announced that the Woman's Auxiliary had given him a check for \$10,000 for this same fund, a noteworthy contribution.

Dr. Bauer called special attention to various parts of the Trustees' report and gave a brief supplementary report explaining the conferences held on hospital accreditation, on trying to have postgraduate expenses made deductible income tax items and spoke of the new public relations plans for the Association under which a lay advisory committee will be appointed.

Dr. Elmer L. Henderson, AMA president, gave an interim report on activities of the coordinating committee. The Trustees and Whitaker and Baxter felt the work of the committee could safely be concluded by the end of the year. Whitaker and Baxter were given a rising vote of thanks. The House demurred at losing their service and voted to retain them on a consultant basis for another year, with continuation of the coordination committee.

Dr. Walter F. Donaldson of the Judicial Council mentioned changes in the Principles of Medical Ethics which had been proposed, particularly one which would permit doctors of medicine to lecture to optometric groups. He also mentioned the persistent problem of dealing with patents, rebates, etc.

The Committee on Medical Education and Hospitals said 48 foreign medical schools had been investigated and approved as proper teaching centers. He also spoke of the policy of the American Medical Association regarding the production of physicians, saying any increase would be determined by the ability of the medical schools to

educate them. The percentage of increase in physicians is already greater than the increase in the general population.

Tuesday was devoted to reference committees, and the House convened again on Wednesday, June 13. It approved of the Trustees' recommendation in regard to dues in the American Medical Association, which was as follows:

"The Board of Trustees has established the following exemptions from the payment of American Medical Association membership dues:

"1. Members who have retired from the practice of medicine, provided they are also excused from the payment of dues, in full or in part, by their component societies and constituent associations.

"2. Members over 70 years of age, regardless of whether or not they are in practice and regardless of local dues exemption.

"3. Members for whom the payment of dues constitutes a financial hardship and who are also excused from the payment, in full or in part, of component and constituent society dues for the same reason. In each case, notification of exemption for financial hardship should be made to the American Medical Association by the secretary of the county and state medical society.

"4. Interns and residents not more than five years after graduation from medical school, except that time spent in military service may be excluded in calculating the five year limit.

"5. Members who enter military service prior to July 1 of any year are exempted from one half of the year's dues and subsequently during service from full dues."

This clear-cut statement of exemptions will make it much easier for county and state societies to act on AMA dues.

The House also approved of the expanded public relations program and the student AMA, feeling both should be encouraged. It also approved the Trustees' suggestion that the Council on Scientific Assembly be expanded to nine members. The House asked it be emphasized that any physician may earmark the funds he gives to the National Medical Education Foundation, and recommended that a special committee be empowered to make statements of policy to guide societies in activating the 12-point program. It also supported the Trustees in their belief that civil authority must govern civilian defense, that the medical profession alone cannot be held responsible, but civil authority must lend its support. The recently passed universal military training bill may affect

the supply of medical services to the Armed Forces and this was recognized.

The Reference Committee on Legislation and Public Relations suggested further study of a resolution asking the AMA to seek legislation establishing a legal basis for amortizing the cost of professional education and approved a resolution condemning the use of federal funds for postgraduate education of individuals. It also recommended, and the House voted, that the fight to get the cost of attending postgraduate courses as a deductible income tax item should be carried to the tax court if necessary.

The Iowa House of Delegates asked further study of legislation which would make it possible for professional people to make their own retirement plan through purchase of government bonds. The AMA House learned that the American Bar Association is preparing legislation to this end which will be introduced shortly. The House voted to give special consideration to this and any other legislation proposed by the bar association. It also voted that the officers should continue to issue statements as to the true facts of medical manpower and physician availability.

The Reference Committee on Amendments to the Constitution and By-laws recommended further study on the proposal to abandon Fellowships and asked the new Committee on Constitution and By-Laws to report to the House of Delegates at the December meeting. A proposal to make the immediate five past presidents of the AMA members of the House was also approved and the necessary changes made so that there be a permanent reference committee on military affairs, that the president and president-elect be made members of the Board of Trustees, and substituted for another resolution was one that a special committee of the House of Delegates be appointed to review the activities of the Council on Medical Service and report back in December. Certain specified changes in the Constitution and By-Laws were also included in its report and were adopted.

The report of the Reference Committee on Reports of Officers approved of a resolution to the memory of Dr. Roy Fouts, of the stressing of ethical standards by the Speaker, of Dr. Henderson's handling of the Committee for the Nation's Health, expressed pleasure at the objectives set forth in Dr. Henderson's talk and trusted that some fundamentally sound basis will evolve from the work on hospital standardization.

The blood bank program was well presented. A brochure on how to start a blood bank has been made available and much information about existing blood banks has been obtained. Three million units are used annually, 70 per cent of which is processed in hospitals, 13 per cent provided by the Red Cross and 17 per cent procured from other sources. Mass blood grouping is inadvisable. Procuring blood is the major issue. Every physician should stress the need for replacement when his patients take blood from a local bank.

He should give blood himself if possible. Each state should have a committee on blood banks. The Red Cross is setting up banks in critical target areas and will expand as necessary. Congress should be reminded of the need for money in any program of procuring blood for the Armed Forces.

The Reference Committee on Miscellaneous Business had a great deal of work referred to it. Included were resolutions calling for standardized forms for reporting health and accident cases and uniform forms for other insurance matters. The Council on Medical Service has done some work on this and progress is being made, although different state laws complicate the matter. Another was the problem of unpaid 1950 AMA dues. The House voted 1951 dues could not be accepted until 1950 dues were paid. A change in the Principles of Medical Ethics in regard to teaching optometrists which had been made at a previous session of the House aroused much comment and discussion, but the action was maintained. The House reaffirmed its expressed policy of putting in the *Journal of the American Medical Association* dissenting expressions of opinion submitted by physicians.

The Reference Committee on Medical Education and Hospitals approved of aid to medical schools from Federal funds on a matching basis for the physical plant and equipment only, similar to the Hill-Burton bill. It also stressed the need for aiding the American Medical Education Fund, and approved the student and intern exchange program. It suggested that the Council on Medical Education and Hospitals and representatives of the Student AMA should confer regarding preceptorships, realizing details must vary with each locality. Referred to the Council alone were different matters such as on radiologic standards, better general practice residencies, increase in number of physicians trained and joint staff and county medical society meetings.

Greatest discussion rose over the accreditation of hospitals. The Trustees have worked out an arrangement whereby the American College of Surgeons, American College of Physicians, American Medical Association and American Hospital Association will carry on an accreditation program under an executive committee of 18 members, three each from the two colleges and six from the two Associations. This may be complemented by the Canadian Medical Association and Canadian Hospital Association who will be given representation.

The delegates discussed this vigorously but the final decision was that the Trustees should continue under the proposed setup, following always the principles elucidated by the House of Delegates.

The report of the Reference Committee on Insurance and Medical Service was challenged on its first recommendation. A resolution calling for the creation of a committee to study the relationship between the AMA and Blue Shield plans was

changed by the committee which referred the study to the Council on Medical Service. A strong dissent was made and it was voted to lay the matter on the table, which was done. Other matters approved by the committee and the House were further implementation of the 12-point program, cooperation with other associations, expansion of the "You and Your AMA" program of the Council on Medical Service and publication of more health insurance news in the *Journal of the American Medical Association*.

A number of resolutions concerning specific items were referred to the proper councils or bureaus for study and possible action. It was realized the Committee on Chronic Diseases had a definite function in stimulating state and county committees to life on this subject. Realistic plans for treatment and care of chronic diseases should be developed. Industrial health should receive more recognition and cooperation.

The report of the Reference Committee on Emergency Medical Service approved in principle of the report on blood banks, took cognizance of the special demands imposed by the UMT bill, asked that a doctor be placed at a high level in the Department of Defense to help work out a defense program, and approved of using VA special centers for severely disabled veterans.

Dues for 1952 were set at \$25.00, a subscription to the *Journal* to be included.

Each state society was asked to have a physician placement service and to cooperate with others. A national conference on physician placement was also recommended.

New officers elected were as follows: President-elect, Louis H. Bauer, Hempstead, Long Island, former chairman of the Board of Trustees; Vice-President, Oscar Hunter, Washington, D. C.; Secretary, George F. Lull and Treasurer, Josiah J. Moore, both of Chicago, Ill.; Speaker, Francis F. Borsell, Philadelphia, Pa.; Vice-Speaker, James R. Reuling, Bayside, N. Y.; Trustees, Walter B. Martin, Norfolk, Va. and David B. Allman, Atlantic City, N. J.; Judicial Council, Walter F. Donaldson, Pittsburgh, Pa.; Scientific Assembly, Samuel P. Newman, Denver, Colo.; Medical Education and Hospitals, Franklin D. Murphy, Kansas City, Kan.; Medical Service, H. B. Mulholland, Charlottesville, Va. and Joseph D. McCarthy, Omaha, Nebr.; Constitution and By-Laws, (a new committee) Louis A. Buie, Rochester, Minn., Britton E. Pickett, Carrizo Springs, Texas, Floyd S. Winslow, Rochester, N. Y., Stanley H. Osborn, Hartford, Conn., and James S. Stevenson, Tulsa, Okla. San Francisco was chosen for the 1954 meeting city.

Dr. Bauer, in his speech of acceptance, stressed the need to expand voluntary insurance plans to fill the gaps which now exist. He said the medical profession cannot relax but must diligently carry on a constructive program. Too many doctors and laymen have little idea of what the American Medical Association stands for. We cannot be purely scientific in viewpoint but must have an interest in the economics of medicine as well. In-

dividual doctors and all medical societies must be leaders in their community.

Medicine is humanitarian and there is no room in it for individuals who think only of their income. As medical men we must support and expand health councils, must organize grievance committees where none exist and cooperate fully with those already functioning. We must set up emergency medical service systems so that the services of some physician will be available when needed. We must assist in training the members of the Auxiliary. They are our strongest allies.

Medical education must be supported financially. It is a question of private enterprise against government funds, and we must continue the effort to raise funds for this purpose so that the practice of medicine shall remain a free enterprise.

The medical profession early insisted on a program for civilian defense. Civilian authorities and the public have been apathetic but we must arouse their interest. Our public relations program can be productive of much good. The lay advisory committee which has been authorized will be helpful. It has taken a long time to awaken the rank and file of the medical profession to the dangers confronting it, but the sleeping giant is now awakened and can accomplish many things.

Before adjourning the meeting, Dr. Borzell, Speaker, called upon Miss Hattie Niehoff, secretary to Dr. Lull and clerk of the House, to present to her a scroll signed by most members of the House together with a purse to make it possible for her to attend future meetings. Miss Niehoff is retiring in September after having spent 37 years in the service of the American Medical Association.

The meeting was adjourned on Thursday afternoon, June 14, 1951.

MEDICAL LICENSES ISSUED FROM May 28-July 15, 1951

Medical licenses were issued to the following during the period of May 28 to July 15, 1951: Walter D. Anderson, Des Moines; George S. Atkinson, Florence, Colo.; Martin J. Bender, Shaker Heights, Ohio; Martyn H. Bierman, Jr., Council Bluffs; Henry J. Billerbeck, Crofton, Nebr.; Catherine J. Box, Belle Plaine; Robert W. Brindley, Perry; Merlin U. Broers, Sterling, Nebr.; Robert J. Byrum, Grand Forks, N. D.; William E. Connor, Stockton, Calif.; David A. Culp, Sunbury, Pa.; Walter G. Dennert, Boone; Philip M. Englund, Iowa City; Frank E. Forsythe, Albion; William P. Garred, Ashland, Ky.; Richard A. Hastings, Athens, Pa.; Robert H. Hayes, Winner, S. D.; Darwin B. Jack, Marion; Robert S. Jaggard, Oelwein; Rolf F. Kruse, Milwaukee, Wis.; Jack L. LaRue, Sioux City; William W. Macy, Iowa City; Samuel T. Mangimelli, Omaha, Nebr.; Charles E. Manthey, Waterloo; Carlyle C. Morre, Terril; John A. Morgan, Long Beach, Calif.; Rex L. Morgan, Shannon City; John R. Scheibe, Bloomfield and Arthur M. Thomson, Cherokee.

NEWS NOTES

From The Committee On Medical Service

ALLOWANCES FOR THE ADMINISTRATION OF ANESTHESIA

Blue Cross and Blue Shield believe that there is need for clarification of the provisions for payment of fees for administration of anesthesia. Many statements for the administration of anesthesia are being sent to Blue Cross that should be sent to Blue Shield and Blue Shield is receiving many that should be sent to Blue Cross.

Briefly, where subscribers have contract code number 10, 11, 12, 13, 20, 21, 22, 23, 30, 31, 32 and 33, it indicates they have only Blue Cross and Blue Cross pays up to \$10.00 for the administration of anesthesia. If the anesthetic is administered by a hospital employee the hospital is paid direct. If a doctor, doctor's employee or anesthetist gives the anesthetic, then in most instances the hospitals cooperate by listing the anesthetist's name on their Statement of Account and Blue Cross makes payment once each month direct to the anesthetist. There is only one exception to this and that is where the subscriber's contract code is indicated as CR or SP and where they have only Blue Cross, Blue Cross pays only for the services of a salaried hospital employee.

Where the subscriber has Blue Shield which is indicated on the subscriber's identification card by one of the following contract code numbers 40, 41, 42, 43, 50, 51, 52, 53, 60, 61, 62, 63, 70, 71, 72, 73, 80, 81, 82, 83, 90, 91, 92 and 93, then the liability for the administration of anesthesia by a doctor rests with Blue Shield up to a maximum of \$10.00. This also applies when the anesthetic is administered by a doctor's employee which will include a private anesthetist (not a hospital employee) who the doctor employs to give the anesthetic. The doctor, when submitting his Doctor's Service Report to Blue Shield, should show on the report the name of the person giving the anesthetic and indicating that he is his employee. He should also show on the bottom of the report that the total charge includes the surgery and anesthetic, then when payment is made to the participating doctor, payment will include the surgical allowance plus the anesthetic allowance. The doctor would then reimburse the private anesthetist for the services for which he has collected. In case the doctor rendering the service is not participating, the Blue Shield payment for both the surgical service and the anesthetic will be made to the subscriber.

AMA CONFERENCE OF OFFICERS

Honorable Richard M. Nixon, Whittier, Calif., addressed the Conference of Presidents and other

officers of the state medical associations June 25 at Atlantic City during the recent AMA meeting.

Senator Nixon told American doctors that they owe it to themselves and to the nation to stay in politics. He believes physicians should become even more interested in all types of political issues and should not confine their activities to legislation relating to medicine. Senator Nixon congratulated American doctors for their tremendous effort in effecting the defeat of compulsory health insurance legislation. He warned them against complacent attitudes and stated further that those who favor compulsory health insurance are continuing to work as many hours as there are in the day to introduce this legislation. Since they have been unsuccessful in introducing it as an entire health program, we can now expect inroads through piecemeal legislation, he stated. Organized medicine must continue with its good offense in order to prove that actions speak louder than words. We have won the battle of words, but now the battle of performance is before us. The majority of people are sold on our present system and it is the responsibility of each of us to see that the attitude of the American people remains the same. Referring again to complacency, he warned that the political picture might change at any time and that we must be ready for a sudden shift to the left. He congratulated medicine for its positive programs but stated that they needed further development. Some of the programs he had reference to were the subsidizing of medical education through the National Education Foundation, physician placement services in rural areas and further extension of voluntary health insurance.

Senator Nixon stated that with the educational background of doctors of medicine, it is essential that they stay in the field of politics, that their guidance lends much to the formation of sound democratic policies.

Senator Nixon, in discussing the MacArthur incident, said that the recall of General MacArthur almost caused a catastrophe in Congress. It climaxed nation-wide resentment toward the President because of his previous actions as well as the position he took on the removal of General MacArthur. Some of these previous actions of the President mentioned were the Kefauver investigations and the investigation of the Reconstruction Finance Corporation.

Senator Nixon then commented on the Korean situation. He believes the war in Korea must end now; that a war is being waged in the wrong

(Continued on page 373)

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. HOWARD W. SMITH, Woodward

President-Elect—MRS. J. DONALD HENNESSY, 205 Frank St., Council Bluffs

Secretary—MRS. CHARLES F. LOWRY, 246 Lincoln, Council Bluffs

Treasurer—MRS. DWIGHT C. WIRTZ, 449-56th St., Des Moines

ANNUAL MEETING OF THE WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

Atlantic City, June 11 to 15, 1951

The Iowa delegates to the National Auxiliary meeting met for a luncheon June 11 at Haddon Hall. Those attending the luncheon were: Mrs. J. Donald Hennessy, Council Bluffs; Mrs. Claire H. Mitchell, Indianola; Mrs. Ralph J. Selman, Ottumwa; Mrs. Frederick W. Mulsow, Cedar Rapids; Mrs. Lester R. Hegg, Rock Valley; Mrs. Elbert T. Warren, Stuart and Mrs. Howard W. Smith, Woodward. Other delegates who attended the meetings were: Mrs. Frederic G. Loomis, Waterloo and Mrs. Thomas L. Vineyard, Ottumwa. Mrs. Edward B. Hoeven from Ottumwa was also a delegate but was unable to attend the convention.

At our luncheon meeting each delegate was given a part of the convention to report on and was asked to send their respective report to Mrs. Keith M. Chapler for publication in the Auxiliary News Letter.

The meetings, luncheons and entertainment in Atlantic City made our trip to the AMA convention a thrilling and inspiring experience. We enjoyed making new friends of doctors and doctors' wives who came from every state in the Union, Hawaii and Alaska.

The following is a report of the meeting I attended on June 15:

Mrs. Harold F. Wahlquist, Minneapolis, Minn., the newly elected President of the Woman's Auxiliary to the American Medical Association presided. Dr. Frank Wilson of the Washington, D. C. office, spoke briefly regarding our contacts with our congressmen. He discussed the human side in making contacts with congressmen. Congressmen are human beings. They appreciate courtesy, consideration and acknowledgement of the work they do for us. *Write our Congressmen after they vote our way. Thank them.*

One congressman said, "The doctors know I am on their side but they don't work for me." The majority of congressmen are very fine people, Dr. Wilson said.

HOW TO CONTACT YOUR CONGRESSMAN

1. Visit him back home personally.
2. Visit him at his office in Washington, D. C.
3. Write an honest, sincere personal letter. Sincerity is more important than knowledge.
4. Send him an honest telegram.
5. Telephone him. (Sometimes it is difficult to reach congressmen by phone.)

The Washington office send the *Capitol Clinic* and *Special Bulletins* to doctors' wives as well as doctors who are interested in keeping informed regarding medical legislation. We can also find medical legislation news in the proper section of each copy of the *Journal of the American Medical Association*. A special committee has been organized to increase the *Bulletin* circulation. Mrs. David B. Allman is the chairman.

There will be increased help in the Public Relations Department of the National Auxiliary. A trained journalist is to be added to the staff.

A new membership invitation form will be available to state auxiliaries by writing to Miss Wolfe at Auxiliary Headquarters. This is a fine aid for use in increasing our membership.

Mrs. Wahlquist stated that a Speaker's Bureau is being planned. *We can get material so we can all say the same things all over the country.*

The Student Nurse Recruitment Program was emphasized. Mrs. Henry from the National Student Nurse Recruitment Committee spoke briefly. The main points brought out were:

1. We need coordinated nurse recruitment programs.
2. High school counselors need to know more about nursing and nursing schools in order to interest girls and boys in nursing as a career.
3. Tell students what nursing offers.
4. Give them the facts of the different types of nursing.
5. Find out what your community is doing first, then plan a nurse recruitment program on the local level.

A. Recommend a broad citizen group-committee to include nurses, doctors, interested lay persons, school counselors, high school principal or school superintendent.

Miss Lynch, Dean of the School of Nursing,

University of Pennsylvania and also a Member of the Committee on Careers in Nursing, stated that we shall need one high school graduate in every ten to take nurses' training to supply the need for nurses over the country. We also need to train practical nurses. She stressed scholarships and loans.

Mrs. Hammer, National Auxiliary Historian, reported that 43 state auxiliaries are carrying out nurse recruitment programs. Dr. Ernest B. Howard, Medical Advisor to our Auxiliary, stressed nurse recruitment as a major project.

A full report of the Annual Meeting will be found in the *Bulletin* of the Woman's Auxiliary to the American Medical Association in the next issue. The *Bulletin* is published quarterly. Anyone wanting to subscribe now can do so by sending one dollar to our *Bulletin* Chairman, Mrs. James P. Clark, Estherville.

Your other delegates will report on other meetings attended and you may find some statements repeated, but some of the outstanding facts made by our distinguished doctors, auxiliary officers and guest speakers are well worth repeating.

Mrs. Arthur A. Herald, Immediate Past President said, "Working together is success." Maintain an interest in the Auxiliary after your office term. We are not just another cultural organization. Take time to discuss what we plan to do as well as tell what we have done. At the convention, the National Auxiliary voted to give \$10,000 (20 per cent of its annual income) to the American Medical Association National Fund for Medical Education. The National Auxiliary voted to give a \$500 nurse scholarship, and \$100 to the World Health Organization.

Dr. George F. Lull, General Manager and Secretary to the American Medical Association, informed us that the AMA has appointed a group of persons to meet with him to help discuss and meet the needs of problems of the lay public. This group includes persons in the field of education, clergy, law, industry, nursing, labor, etc.

Dr. John W. Cline, President of the AMA, states, "Service to humanity is medicine's prime objective." Good medical care is constantly increasing.

Mrs. Harold F. Wahlquist, President of the National Woman's Auxiliary, said, "Live the tradition in which we believe." Each one of us is an extension of the auxiliary in our local community. It is strategic to belong to a local organization. Our aim always is to give the public accurate information.

Mrs. Theodore Heinz, National Chairman on Public Relations, said, "Lose ourselves in continuous service, community health service to show people we do not need compulsory health insurance. She quoted David Hale, 'I am only one, but still I am one. I cannot do everything but I can do something.'"

MRS. HOWARD W. SMITH, PRESIDENT

REVISIONS TO THE CONSTITUTION AND BY-LAWS OF THE WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

ARTICLE II: OBJECTS

The objects of the Auxiliary are:

1. To assist the American Medical Association in its program for the advancement of medicine and health.
2. To coordinate and advise concerning the activities of constituent auxiliaries.
3. To cultivate friendly relations and promote mutual understanding among the physicians' families.

ARTICLE IV: MEMBERSHIP

SECTION 1: Membership in the National Auxiliary shall be composed of (1) active members, (2) associate members and (3) honorary members.

SECTION 2: (a) Active memberships in the National Auxiliary shall be the wives of physicians who hold active membership in the American Medical Association; (b) widows of physicians who were in good standing of the American Medical Association shall be active members and be eligible for all offices except that of president; (c) members-at-large shall be active members in the states and territories where there are no constituent auxiliaries, and who are wives of physicians who hold active membership in the American Medical Association; (d) associate members shall be those who do not qualify as active members; (e) honorary membership in the National Auxiliary may be conferred by the convention on the recommendation of the Board of Directors on a member who has rendered long and signal service to the National Auxiliary. Honorary members shall pay no dues and shall have all rights and privileges of active members.

Only active members shall be eligible to vote and hold office.

SECTION 3: No member of the American Medical Association shall be eligible to active or associate membership in this Auxiliary.

ARTICLE V: THE CONVENTION

SECTION 3: (a) The voting delegates of the Convention shall be as follows: the president of each constituent auxiliary, provided she qualifies as a member of the National Auxiliary; and (b) in addition, one representative from each constituent Auxiliary for each 100 members, or major fraction thereof, active members in good standing of the National Auxiliary as defined in ARTICLE IV, SECTION 2, provided, however, that each constituent auxiliary shall be entitled to at least one voting delegate in addition to its president.

Between March 1 and April 1 annually, the Treasurer shall submit to the Executive Secretary a statement as to the number of members of each constituent auxiliary whose dues to this auxiliary are shown by the books of the Treasurer

as of March 31 to be paid. On the basis of this statement the Executive Secretary shall determine the number of voting delegates to which each constituent auxiliary is entitled that year and shall accordingly notify the constituent auxiliaries by April 15.

ARTICLE VI: GENERAL OFFICERS

SECTION 1: The general officers of the Auxiliary shall be the President, the President Elect, the First Vice-President, the Second Vice-President, the Third Vice-President, the Fourth Vice-President, the Constitutional Secretary, the Treasurer, the immediate Past President, and six elected Directors (three to be elected annually) who shall be active members of the National Auxiliary.

SECTION 4: If by reason of death, or refusal or failure to serve or qualify, any other general office other than those noted in the preceding Section, becomes unoccupied, the Board of Directors by majority vote shall designate some active member of the Auxiliary to serve the unexpired portion of the term in compliance with ARTICLE VI, SECTION 6.

SECTION 5: The Convention shall elect annually three directors who shall serve for two years. The immediate Past President shall serve for one year as a director on the Board of Directors.

SECTION 6: To be eligible for election, succession or appointment as president, president-elect or first vice-president, a member must have served (a) as president of the constituent state or territorial auxiliary, and in addition, (b) as an officer or as chairman of a standing committee, or both, of this Auxiliary for at least two years. No member of the Board of Directors shall hold, during her term of office, any other office of the National Auxiliary nor serve as chairman of a standing committee unless provided for in these By-Laws.

By-Laws

CHAPTER III: DUTIES OF GENERAL OFFICERS

SECTION 2: The President shall be the presiding officer of the Board of Directors and of the Convention. She shall be a member ex-officio of all standing committees. Subject to confirmation of the Board of Directors, she shall appoint the chairmen of the standing committees except where these By-Laws provide to the contrary. She shall act as temporary chairman of the Nominating Committee as provided by Chapter II, Section 2 (a) of these By-Laws. She shall appoint such special committees as she may deem necessary, provided, however, that no such special committees shall be appointed to assume any of the duties devolving by these By-Laws on any standing committee. She shall, with the President-Elect, prepare the agenda or program for the annual conference of state presidents, presidents-elect and National chairmen of standing committees. She shall also appoint an historian and a parliamentarian.

SECTION 3: The President-Elect shall be of active aid to the President and by membership on the Board of Directors during the term of her office so conduct herself as to obtain the greatest possible acquaintance with the affairs and personnel of the Auxiliary so as to enable her to fulfill efficiently the office of President when she succeeds thereto. She shall serve on all standing committees as a member ex-officio without the right to vote. She shall, with the President, prepare the agenda or program for the annual conference of state presidents, presidents-elect and National chairmen of standing committees. She shall also serve as presiding officer at the Conference of State presidents, presidents-elect and National chairmen of standing committees.

CHAPTER IX

The Presidents and Presidents-Elect of the constituent auxiliaries and the National chairmen of standing committees shall constitute the Conference of the Auxiliary. Such conference shall be held during the days that the Board of Directors holds its annual mid-year meetings and at a place to be determined by the Board of Directors. The agenda or program for the Conference shall be arranged by the National President and President-Elect. The Conference shall be informed concerning and shall consider the special activities of the Auxiliary. It may adopt resolutions or recommendations for presentation to the Board of Directors before the adjournment of the Board at the meeting held at that time.

CHAPTER X: POLICY

SECTION 1: The National Auxiliary shall not affiliate with any other federated organizations, nor provide for representation on its Board of Directors or representatives of other organizations, nor be itself officially presented on the Board of other organizations except with the approval of the Advisory Council or the Board of Trustees of the American Medical Association.

NEWS NOTES

(Continued from page 370)

place, the wrong time and the wrong enemy. He believes it should be brought to a conclusion at the earliest moment. He placed the blame for the Korean War on improper handling of peace negotiations at the close of World War II.

In his deliberation, Senator Nixon gave his impression of one susceptible to communism as a native American, a college graduate, holding high office in the government. They have become communists because of a loss of faith in the American system, he said. He believes that in order to regain the faith of these people it will be necessary to be truthful in all dealings and that each individual American must be a sales person on behalf of our system of Government.

STATE DEPARTMENT OF HEALTH

Nathaniel Diering

THE ATTACK UPON BREAST CANCER

How effective are our methods of health education in motivating people to act upon what they learn? The Division of Cancer Control, with the cooperation of the State Medical Society and the Iowa Division of the American Cancer Society, are presently engaged in a unique study to determine the answer to that question.

In a new film recently produced entitled "Self Examination of the Breast" they feel that they have a device whereby women themselves can do something to lower the death rate from cancer in this site.

For the past several years approximately 400 Iowa women have died annually of cancer of the breast. Many of these deaths were needless because cancer of the breast if discovered early can be cured in 80 to 90 per cent of the cases. Despite the fact that the breast is so accessible to examination, and the early signs so easily recognizable, more than 60 per cent of patients seen by the physician already have axillary metastasis.

According to Dr. C. D. Haagensen, there is a definite relationship between the occurrence of metastasis and the size of the primary growth. In a group of patients whose primary lesions measured only 15 millimeters or less in their largest diameter, only three per cent had axillary metastasis. He found the average diameter of the primary tumor in breast cases admitted to Presbyterian Hospital, in New York, to be 4.8 cm., and metastasis present in 70 per cent of them. The five-year cure rates in those without metastasis was 90 per cent. After metastasis occurred the cure rate was reduced to more than one-half. Since every cancer begins in a single cell and for a variable period is limited to a small group of cells, it is important that it be discovered while it is a local process. It is believed that careful examination will discover a lump in the breast of approximately one centimeter in size.

The film being shown demonstrates a correct

technic of breast examination which can be carried out by the woman herself in the privacy of her home and with no sacrifice of modesty or money. It emphasizes the importance of avoiding too much thinking about cancer, and suggests that the examination be made only once a month after the menstrual period. If the film is actually motivating, the number of breast cancers seen by physicians, and admitted to hospitals, should be increased in the next two or three years, and what is more to be desired the death rate from breast cancer greatly reduced.

As a measure of this, a State-wide prevalence study is now being made to determine the number of cases and the sites of all cancers seen by any physician, hospital, or clinic last year. Spot surveys made from year to year will then indicate the expected improvement. In one county alone it is known that nine women were stimulated by seeing the film to visiting their doctor for confirmation of their own findings. Such statistics, of course, are difficult to obtain.

As of May 15, more than 2,100 showings of the film have been made to an estimated audience of 95,000. The names of more than 40,000 women who have seen the film have been obtained. There are approximately 400,000 women of cancer age in Iowa, and an organized effort is being made to reach every one of them. Thus far the film has been shown in every county of the State, and it is estimated that we have reached 25 per cent of our goal in the past six months.

Cancer of the breast is only part of the cancer problem—however, it is a site susceptible to attack, and if we can prevent 90 per cent of deaths from cancer of the breast we will have reduced our cancer death rate by 10 per cent. Doctors, of course, bear the ultimate responsibility for cancer diagnosis and treatment, and self-examination is not intended to replace expert physical examination. Few women, however, see their doctors more than once or twice a year, and even a 6 months interval is too long to postpone active treatment for cancer.

CONTACT AND SPECIAL X-RAY PROGRAMS

January 1 to June 30, 1951

Nurse Visits:.....
Homes..... 717 Physicians..... 258 Individual Histories.....1601
Requests for special programs were received from four colleges, one high school, one consolidated school and one county home. It was necessary to schedule a special program to complete follow-up in a county previously surveyed by the county-wide program.

The County-wide X-ray Program was brought to seven counties during the past sixth months. Figures on three completed counties reveal 40,804 people were examined with the miniature film, and an additional 27,707 in three partially completed counties. No data is as yet available on the seventh county. Of those participating in the program, 288 had abnormal shadows and were requested to return for 14"x17" chest films; 277 responded; 71 cases of tuberculosis were found, interpreted as follows:

Analysis of Non-Tuberculous Findings:			
Thoracic Cage Anomaly.....	13	Hilar Node Calcification.....	139
Bone Lesion.....	6	Calcif. diffuse granulomatous lesions	114
Pleural Abnormality.....	56	Pneumonitis	33
Post-operative chest.....	12	Possible Neoplasm.....	18
Abnormal diaphragm.....	12	Diffuse Punctate or linear infiltrate	14
		Incr. bronchvas. markings.....	21
		Atelectasis	11
		Emphysema	17
		Mediastinal Mass.....	8
		Abnormal Aorta.....	26
		Abn. Heart size/contour.....	31

Five of the 23 Contact X-ray Programs were conducted by county nurses; the remainder by our four field staff nurses. In the Contact and County-wide Programs continuous follow-up is maintained by staff and county nurses to assist physicians when possible with carrying out recommendations made by the radiologist and frequently to complete arrangements for admissions to the various sanatoria.

A more detailed coding of reports of tuberculosis received since January 1, 1951, enables us to present the following summary of new cases reported for the six months period:

Number Cases Reported for First Time.....	390
January 1 to June 30, 1951.	

Minimal	75
Moderately Advanced	101
Far Advanced	116
Not Classified	98

Private Physician	51
Sanatoria:	
Broadlawns	13
Oakdale	64
Sunnyslope	10
Sunnycrest	12
Pine Knoll	10
River Heights	
*Contact Program	23
*County-wide Program	11
Veterans Administration	72
Death Certificate	33
All Others	91

Broadlawns	15
Oakdale	85
Sunnyslope	14
Pine Knoll	14
River Heights	
State Mental Hospital	7
State Penal Hospital	
State College Hospitals	6
All Others	60
Not hospitalized or not stated	189
(*) X-ray interpretations referred to family physician for final diagnosis.	

Three hospitals in the State are now using the small film for admission screening. Of these three, we have a report on the first five months from Iowa Methodist Hospital:

Essentially negative.....	852	Pneumonia	70
Miscellaneous Pathology.....	251	Cardiac	94
Cancers and Tumors.....	29	Tuberculosis Suspect.....	24

Early in January an arrangement was made with the Department of Public Instruction to establish a School Bus Driver's Tuberculosis Testing Program. Bus drivers who are new appointees are skin-tested by their local physician and

If positive are notified to report to the Mobile X-ray Unit for a 14"x17" film when the Unit is in the immediate or neighboring county. The Department of Public Instruction is notified in advance of the Unit Schedule and bus drivers are contacted through the county superintendent of schools.

Diseases	June 1951	May 1951	June 1950	Most Cases Reported From These Counties:
Diphtheria	0	1	2
Scarlet fever	30	23	17	Black Hawk; Polk, Worth
Typhoid Fever	0	0	1
Smallpox	0	0	0
Measles	807	807	547	Des Moines, Dubuque, Story
Whooping Cough	73	72	131	Clinton, Boone, Linn
Brucellosis	56	42	23	Buena Vista, Hardin, Keokuk
Chickenpox	192	305	222	Dubuque, Des Moines, Linn, Story
Influenza	0	0	0
Meningitis	0	4	4
Mumps	225	359	159	Des Moines, Johnson, Linn, Story
Pneumonia	6	6	3	Scattered
Poliomyelitis	7*	5	21	Scattered
Rabies in Animals	59	52	35	Polk, others scattered
Tuberculosis	64	91	55	For the State
Gonorrhea	54	38	50	For the State
Syphilis	193	155	121	For the State

* (and 3 delayed)

Effective July 1, 1951, the State Hygienic Laboratory at Iowa City will observe a 40 hour week. Only emergency examinations will be performed on Saturday mornings. Blood tests for marriage are not considered to be of an emergency nature.

Iowa Academy of General Practice

President—Cecil V. Hamilton, M.D., 145 E. 4th St., Garner

President-Elect—Joseph G. Fellows, M.D., 405½ Douglas Ave., Ames

Vice President—Ivan T. Schultz, M.D., 106 N. Taft St., Humbolt

Secretary-Treasurer—William M. Sproul, M.D., 912 Equitable Bldg., Des Moines

Garner, Iowa
July 5, 1951

To The Iowa State Medical Society:

In this, our first appearance in the *Journal*, I want to express to the Iowa State Medical Society the appreciation of the Iowa Academy of General Practice for the privilege of presenting to the profession of the state the worthwhile news of our organization. We hope this will be the beginning of a long, fruitful and pleasant association between our two organizations. We thank you genuinely.

Yours truly,
C. V. Hamilton, M.D., President
Iowa Academy of General Practice

POST-GRADUATE MEETINGS

The Iowa Academy of General Practice is happy to announce its plans for the forthcoming winter. It has been decided to offer three one-day post-graduate courses at the Hotel Savery in Des Moines, which we hope will be of special value to the practitioners of Iowa and to our members in particular. These courses will all be recognized for credit against the formal post-graduate work required of Academy members. The dates set for these meetings and the subjects to be covered are as follows:

September 6, 1951—Surgical Diagnosis in General Practice.

November 8, 1951—Gastro-enterology.

January 24, 1952—Geriatrics.

At the present writing, nationally known speakers are being contacted for these programs, and so it is impossible to name all the speakers at this time, but we hope that the general practitioners and our friends in Iowa will watch this page in a somewhat later issue for announcements of the speakers for the later meetings. The program for the September 6 meeting will be as follows:

8:00 Registration

9:00 "Diagnosis of the Acute Abdomen"

Philip J. Thorek, M.D.

Assistant Clinical Professor of Surgery
University of Illinois

10:30 "Treatment of Simple Fractures"

Carroll B. Larson, M.D.

Professor and Head of the Department
of Orthopedic Surgery
University Hospital, Iowa City

12:00 Luncheon and Speaker

Ransom D. Bernard, M.D.

General Manager

Iowa State Medical Society

2:00 Subject to be announced later

Philip J. Thorek, M.D.

3:30 "Low Back Pain"

Carroll B. Larson, M.D.

Dr. Bernard, who has been a member of the Constitution and By-laws Committee of the American Academy of General Practice, is completing a survey of the conditions of the practice of medicine in the state, and we feel all doctors will be interested in the report he will make to us.

NEW MEMBERS

All members of the American Academy of General Practice have received a membership application blank from the headquarters office in Kansas City asking them to invite a colleague to become a member of the Academy. We might suggest that the member not only procure an applicant, but see that he gets to Des Moines for the September meeting if at all possible. In this way he will become acquainted with one of the main functions of the Academy of General Practice; namely, helping the general practitioner to keep up with the advancements in medicine. To those who read our page who might be interested and are not invited by some member, the Iowa Academy invites you to attend the post-graduate meeting in Des Moines on September 6, where application blanks will be provided for those who are interested.

PURPOSES OF AAGP

The Academy wants it strictly understood that we have one sole purpose for our organization, that of being a help to the general practitioner. We feel that the general practitioner should be interested in his post-graduate education, and for that reason regular members of the Academy are required to present evidence of having been present at 150 hours of post-graduate lectures over each three year period, 50 hours of which must be at formal post-graduate courses such as the courses in Des Moines spoken of above. It is our belief that better general practitioners will aid not only themselves, but all members of the profession, as well as the patients we serve.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

ATLAS OF HUMAN ANATOMY, Volume II, by M. W. Woerdeman, M.D., F.R.N.A., Sc., Professor of Anatomy and Embryology and Director of the Department of Anatomy, University of Amsterdam. The Blakiston Co., Philadelphia, 1951. Price \$11.00.

PRACTICAL CLINICAL PSYCHIATRY, by Edward A. Strecker, A.B., A.M., Sc.D., Litt.D., LL.D., M.D., Professor of Psychiatry, School of Medicine, University of Pennsylvania; Franklin G. Ebaugh, A.B., M.D., Professor of Psychiatry, University of Colorado School of Medicine; Director, Colorado Psychopathic Hospital; and Jack H. Ewalt, M.D., Professor of Neuro-Psychiatry, Administrator of Hospitals, University of Texas Medical Branch, Galveston, Texas. Section by Leo Kanner, M.D., Associate Professor of Psychiatry, Johns Hopkins University School of Medicine. Seventh Edition. The Blakiston Co., Philadelphia, 1951. Price \$7.00.

SPATIAL VECTOR ELECTROCARDIOGRAPHY, by Robert P. Grant, M.D., National Heart Institute, Bethesda, Md.; and E. Harvey Estes, Jr., M.D., U.S. Naval Hospital, Bethesda, Md. The Blakiston Co., Philadelphia 5, New York, 1951. Price \$4.50.

THE 1950 YEAR BOOK OF PHYSICAL MEDICINE AND REHABILITATION (December, 1949-January, 1951), edited by Frank H. Krusen, M.D., Professor of Physical Medicine, Mayo Foundation; Head of the Section on Physical Medicine and Rehabilitation, Mayo Clinic; associate editors: Earl C. Elkins, M.D., Assistant Professor of Physical Medicine, Mayo Foundation; Consultant in Physical Medicine and Rehabilitation, Mayo Clinic; and George G. Deaver, M.D., Professor of Clinical Rehabilitation and Physical Medicine, New York University College of Medicine; Director of the Department of Physical Medicine and Rehabilitation, Bellevue Hospital. The Year Book Publishers, Inc., Chicago, 1951. Price \$5.00.

BOOK REVIEWS

PSYCHOSOMATIC MEDICINE, ITS PRINCIPLES AND APPLICATIONS, by Franz Alexander, M.D. (W. W. Norton and Co., New York, \$4.50).

Dr. Alexander, Director of the Chicago Institute for Psychoanalysis and Professor of Psychiatry, has long been a prominent leader in American psychiatry. In this book he sets forth to describe the fundamental concepts of the psychosomatic approach to medical disorders and to present the results of study concerning the influence of emotions on bodily processes in health and disease.

The first part of this book is devoted to a relatively lucid description of the current thinking about a psychosomatic approach to the etiology of medical disorders. The author emphasizes the multiple factors of etiological significance in any given disorder rather than the common tendency to describe the etiology as either organic or functional. He further emphasizes the physiological mechanisms whereby emotional disturbances are translated into somatic disturbances. This helps resolve some of the reluctance to recognize how a chronic emotional disturbance may ultimately contribute to a demonstrable organic change.

The latter part of the book deals with the etiological significance of emotional factors in specific diseases. The psychodynamics of the disease are in keeping with psychoanalytic theory. Hence these are challenged by psychiatrists who only partially agree with analytic theory.

Among the many keen observations of the author is that the crucial factor in the pathogenesis of a peptic ulcer is the frustration of the dependent, help-seeking and love-demanding desires. It is common par-

lance that people who overcompensate for their dependent desires with an outward show of go-getting activity and acceptance of leadership and responsibilities are prone to develop peptic ulcers. However we have all encountered patients with peptic ulcers who obviously were not go-getters and were often demanding and overly dependent. The point is, according to Dr. Alexander, that in such persons the dependent tendencies are frustrated not by internal repudiations but by external circumstances.

This book should prove useful to physicians interested in the psychosomatic approach to medicine as it has been modified by more than a decade of testing.—W. Macy, M.D.

THE MICROKARYOCYTES, AND FOURTH CORPUSCLES AND THEIR FUNCTIONS, by K. G. Khorozian, M.D. (Meador Publishing Co., Boston, \$12.00).

The author of this book claims that all cells are composed of cells of minute dimension, the microkaryocytes. He has devoted an entire volume to an unfathomable discussion of this topic.—R. F. Birge, M.D.

PARASITIC INFECTIONS IN MAN, edited by Harry Most, M.D. (Columbia University Press, New York, \$4.50).

This volume is a continuation of a series of symposia held under the auspices of the Section on Microbiology of the New York Academy of Medicine. Edited by Dr. Most, they include a wide range of subjects dealing with the more recent research on parasitic infections. Basic research in the field is covered as well as some of the more practical diagnostic aspects. Fourteen papers are included in this edition, and no attempt is made to cover the entire subject.—W. Rindskopf, M.D.

THE ABNORMAL PNEUMOENCEPHALOGRAM, by Leo M. Davidoff, M.D., and Bernard S. Epstein, M.D. (Lea and Febiger, Philadelphia, \$15.00).

In 1937 Dr. Davidoff and the late Dr. Dyke authored *The Normal Encephalogram*. The present monograph, by Drs. Davidoff and Epstein, and dedicated to the memory of Dr. Dyke, forms a logical and worthy companion volume to the first. Dr. Davidoff has had a long and brilliant career in neurosurgery, and the material for the present volume is based upon an extensive experience. The work is intended for all those interested in neurological diagnosis, according to the authors' own words, and includes a chapter on the pathology of brain tumors. Case histories are used liberally.

The term "pneumoencephalography" is defined by the authors to mean roentgenographic studies of the skull after injection of some gas into the ventricular system, either directly (ventriculography) or indirectly, through the spinal subarachnoid space or the cisterna magna (encephalography). Various tumorous and non-tumorous conditions of the brain are considered separately, both as to location and to pathologic type.

This book is undeniably reliable, and will serve

good use as a fundamental reference volume. It does lack easy readability; and this is due in large measure, I believe, to the efforts of the authors to be complete and accurate, and to the amount of space given to analyses of their own material. The reviewer would prefer that the authors had utilized diagrams to illustrate many of the points they make, and a more concise and perhaps more didactic presentation of the subject matter. However, there can be no serious criticism of a book of this fine quality, and the authors have admirably fulfilled their stated purpose.—*J. T. Bakody, M.D.*

CANCER AS I SEE IT, by Henry W. Abelman, M.D. (Philosophical Library, New York, \$2.75).

Dr. Abelman attempts to prove that "the mold or fungus is the primary cause" of cancer. His theory may be correct, but no new material is offered in support of his contention. This book is likely to be confusing to the layman and will certainly be unconvincing to the profession.—*W. Rindskopf, M.D.*

TEXTBOOK OF MEDICINE, edited by Russell L. Cecil, M.D. and Robert F. Loeb, M.D. (W. B. Saunders Co., Philadelphia, \$12.00).

Since 1927 this has been the standard text in general medicine for most medical schools and practicing physicians. A new Co-Editor, Dr. Robert F. Loeb, now cooperates with Dr. Cecil in arranging this excellent new edition. Both editors are also contributing authors to parts of the text.

New articles have been added to bring the reader up to date since the previous edition was printed in 1947. Throughout the entire book the most recent advances have been included when applicable to the subject. Wherever necessary, all articles have been revised or re-written, and authoritative new authors have composed the subjects on which they are eminently qualified to write.

This textbook, as always, is a must for physicians practicing general medicine.—*A. G. Lueck, M.D.*

WHEN MINDS GO WRONG—A Simple Story of the Mentally Ill—Past, Present and Future, by John M. Grimes, M.D. (Published by the author, Chicago, \$5.00).

This volume is a well organized story of the mentally ill in America told in considerable detail and laid against a background of rich personal experience acquired by the author both as a staff physician and in the capacity of director of a survey of various psychiatric institutions carried out under the auspices of the AMA some years ago.

Our present care of the psychotic comes under frank, vigorous attack in all of its phases, including organization, personnel and definitive treatment. Such factors as the corruptness of politics which fosters the present system, the apathy of relatives and of the public-at-large are subjected to strict analysis.

Envisioned is a model state hospital of the future in which patients are pictured as being assigned to roles as active citizens in a separate, functioning community under a minimum of physical or emotional restraint. Attendants as such would be eliminated and patient care dispensed precisely by qualified physicians and registered nursing personnel.

While the need for such a treatise as this has been relatively great and while one can find little basis for

disagreement with most of the work, the author's flamboyant style of writing tends to impart a shadow of mistrust upon some of the otherwise perfectly factual material.—*P. T. Sloss, M.D.*

THE 1950 YEAR BOOK OF DRUG THERAPY (October, 1949-September, 1950), edited by Harry Beckman, M.D. (The Year Book Publishers, Inc., Chicago, \$5.00).

This book begins with a special article written by the author entitled, "Advances in Drug Therapy During the Decade, 1940-1950." After a brief review of advances in drugs therapy, the editor presents outstanding contributions of the decade classified under the various divisions of general medicine. Careful selection of material from all medical publications of the year and a systematic arrangement of the same renders this book to be of special value.

The editor's comments are appended in fine print and are quite helpful, being written in concise, to-the-point style. The busy practitioner in any field of medicine will find this book helpful, readable and of great value in keeping abreast of these progressive times.—*H. C. Black, M.D.*

HOSPITAL STAFF AND OFFICE MANUAL, by T. M. Larkowski, M.D. (Ramine Pierson Publishers, Inc., Great Neck, N. Y., \$4.95).

This small volume has been prepared primarily for quick reference for the busy practitioner covering the usual conditions seen in hospital and office practice. Diagnostic aids are described. No detailed discussions are included. The book's value therefore is limited to a handy reference manual.—*E. M. George, M.D.*

GROWTH AND DEVELOPMENT OF CHILDREN, by Ernest H. Watson, M.D. and George H. Lowrey, M.D. (The Year Book Publishers, Inc., Chicago, \$5.75).

Great interest has developed during recent years in the growth of children and the development of their skills and complexity of function. We have learned that the appraisal of the child must be individualistic with open-minded comparison to the standard norms. Each child has the right to develop to the limits of his endowment; our appraisal must determine if that right is being hindered, and if so, how, and what can be done to re-establish it.

This excellent synopsis of growth and development serves a valuable purpose in providing a bridge across the gap between the relatively brief discussions of the problem in the pediatric texts and the ever-increasing studies reported in the literature. In spite of being a synopsis, the coverage of the subject is adequately comprehensive to serve as a guide and review.

The contents are divided into discussions of heredity and environmental factors, fetal growth and development, the problems of the premature child, consideration of normal physical measurements and methods of appraisal of same, organ-system development, metabolism and nutrition. To complete the synopsis, the last chapter consists of an outline of abnormal growth. Ample references are cited, and there is an adequate number of useful tables, charts and diagrams.

The practicing pediatrician should not accept this work as a complete treatise on growth and development. The value lies in its usefulness as a guide and a review. It should be most helpful to the pediatrician preparing for Board examinations.—*M. E. Alberts, M.D.*

SOCIETY PROCEEDINGS

MEETINGS

Black Hawk

The annual stag of the Black Hawk County Medical Society was held June 28 at the Medical Lodge in Waterloo. James P. Cooney, Brigadier General, Radiologist Consultant for the Atomic Energy Commission, who recently returned from Eniwetok was the speaker.

Washington

The Washington County Medical Society held its monthly meeting June 28 in Washington. Dr. Horace M. Korn, Iowa City, spoke on "The Use and Abuse of Digitalis in Heart Disease."

PERSONALS

Dr. Arthur T. Austin, formerly of Kansas City, Mo., has become associated with **Dr. John H. Stewart** in Ottumwa. A 1945 graduate of the University of Nebraska College of Medicine, Omaha, Dr. Austin had recently completed additional training in radiology.

Dr. Martyn H. Bierman, Jr., formerly of St. Louis, Mo., has become associated with **Dr. J. Donald Hennessy** in Council Bluffs. A 1945 graduate of the Louisiana State School of Medicine, Dr. Bierman will specialize in obstetrics and gynecology.

Dr. Joseph F. Donahoe, Fort Dodge, has been recalled to active duty with the Army Medical Corps. He recently reported to the Brooke Army Medical Center in San Antonio, Texas.

Dr. Harold C. Field has purchased the facilities of **Dr. Ray F. Goding** in Guthrie Center. Dr. Field was graduated from Northwestern University Medical School.

Dr. Murwyn L. Hicks, formerly of Dubuque, has entered a residency at the University Hospitals in Iowa City.

Dr. George M. Johnson, Marshalltown physician for more than 43 years, has announced his retirement. Dr. Johnson will make his home in Overland, Ohio.

Dr. Herbert L. Klemme, formerly of Little Rock, Ark., has joined the Corn Belt hospital staff. A 1950 graduate of the University of Arkansas Medi-

cal School, he served his internship at the University Hospitals in Little Rock.

Dr. Norman Krueger has become associated with **Dr. Elbert T. Warren** in Stuart. A 1950 graduate of the SUI College of Medicine, Dr. Krueger recently completed his internship at the St. Francis Hospital in Wichita, Kan.

Dr. Lauren R. Moriarty, who had practiced medicine in Villisca for 12 years, has begun a four year course of study in pathology at the Kansas University Medical Center in Kansas City, Kansas.

Dr. Paul H. Schaefer, Burlington, has retired from the practice of medicine and is now making his home in Champaign, Ill.

Dr. Walter H. Schultz was recently honored for his 50 years medical practice in the Schleswig community.

Dr. John J. Sullivan, formerly of DeWitt, has begun post graduate work in obstetrics and gynecology at the Stritch School of Medicine of Loyola University in Chicago.

Dr. Robert T. Tidrick has been appointed professor and head of the Department of Surgery at the State University of Iowa College of Medicine. Dr. Tidrick succeeds **Dr. Nathan A. Womack** who recently resigned.

Dr. Jack F. Vincent, Fort Dodge, has been ordered to active duty with the United States Air Force on July 9.

Dr. Daniel R. Webb, formerly of Cedar Rapids, is now practicing medicine at the State Sanatorium in Oakdale.

DEATH NOTICES

Dr. Ottmer N. Bossingham, 79, who had practiced medicine 52 years, died suddenly at his home in Clarinda on May 28. Dr. Bossingham was graduated from the State University of Iowa College of Medicine in 1899. He was a member of the Page County and Iowa State Medical Societies.

Dr. Prentiss Bowden Cleaves, 71, Cherokee physician for 38 years, died June 6 following a stroke at his home. Dr. Cleaves was a 1902 graduate of the University of Michigan College of Medicine.

He was a former member of the Cherokee County and Iowa State Medical Societies.

Dr. Eugene V. Donlan, 53, Clinton physician, died July 3 after a brief illness. A 1931 graduate of the Stritch School of Medicine of Loyola University, Chicago, Dr. Donlan had practiced medicine in Clinton for the past 20 years. Dr. Donlan was a member of the Clinton County and Iowa State Medical Societies.

Dr. Homes J. Gilfillan, Sr., 83, who had practiced medicine in southeastern Iowa for half a century before retiring several years ago, died in Bloomfield July 14 following a heart attack. He was an 1896 graduate of the Keokuk Medical College. Dr. Gilfillan was a life member of the Van Buren County and Iowa State Medical Societies.

Dr. Gisle Martin Lee, 84, Thompson physician for 57 years, died July 14 at the Forest City hospital following an illness. Dr. Lee was a 1893 graduate of the Rush Medical College in Chicago. Dr. Lee was a life member of the Hancock-Winnebago County and Iowa State Medical Societies.

Dr. Jesse Alva Pringle, 75, former Bagley physician, died at his home in Onomowac, Wis. April 28. Dr. Pringle was a 1901 graduate of the State University of Iowa College of Medicine and had practiced medicine in Bagley for more than 40 years until his retirement about five years ago. Dr. Pringle was a member of the Dallas-Guthrie County and Iowa State Medical Societies.

ROSTER OF IOWA PHYSICIANS IN MILITARY SERVICE

As of July 15, 1951

Ackerman, J. H., Clarksville
(Hot Springs, Ark.).....U.S.P.H.S.
Alberts, M. E., Des Moines
(Des Moines).....Lt. (jg), U.S.N.R.
Ashby, J. D., Davenport
(Battle Creek, Mich.).....Major, A.U.S.
Bartholomew, R. D., Lake City
(Palo Alto, Calif.).....Lt. (jg), U.S.N.R.
Bartley, R. L., Sully
(Pensacola, Fla.).....U.S.N.R.
Benge, D. K., Dows.....
Camp, J. R., Thompson
(San Diego, Calif.).....Lt. (j.g.), U.S.N.R.
Carroll, T. J., Sibley.....
Carson, R. W., Winterset
(APO San Francisco, Calif.).....1st Lt., A.U.S.
Coyne, K. M., Burlington
(FPO San Francisco, Calif.).....Cmdr., U.S.N.R.
Dalager, R. D., Ottumwa
(Junction City, Kan.).....A.U.S.
Davidson, M. C.
(APO New York, N. Y.).....Lt. Col., A.U.S.
Davis, S. K., Des Moines
(Seattle, Wash.).....
Donahoe, J. F., Fort Dodge
(San Antonio, Texas).....U.S.A.F.
Fitch, R. E., Des Moines
(Bangor, Me.).....1st. Lt., U.S.A.F.

From Paul, West Des Moines
(Lackland Field, Texas).....1st Lt., A.U.S.
Gladstone, W. S., Jr., Iowa City.....U.S.A.F.
Goenne, W. C., Jr., Davenport
(Tacoma, Wash.).....Major, A.U.S.
Jensen, K. V., Newton
(San Antonio, Texas).....1st Lt., U.S.A.F.
Johnson, F. N., Madrid
(San Antonio, Texas).....1st Lt., A.U.S.
Johnson, M. H., Iowa City
(Tacoma, Wash.).....Capt., A.U.S.
Keil, P. G., Des Moines (Bangor, Me.).....U.S.A.F.
King, R. E., Des Moines
(Camp Polk, La.).....Capt., A.U.S.
Krause, R. E., Ottumwa.....
Kruse, R. H., Conrad
(San Diego, Calif.).....U.S.N.R.
Kurth, R. J., Waterloo.....A.U.S.
Landis, S. N., Des Moines
(Topeka, Kan.).....Major, U.S.A.F.
Leiter E. R. K., Des Moines (Bangor, Me.)...U.S.A.F.
McCrary, W. A., Lake City
(APO San Francisco, Calif.).....Capt., A.U.S.
Mangan, J. T., Forest City (FPO San Francisco, Calif.)
Marquis, F. M., Waterloo.....A.U.S.
Merkel, B. M., Des Moines
(Bangor, Me.).....Col., U.S.A.F.
Mitchell, R. C., Iowa City
(San Antonio, Texas).....1st Lt., A.U.S.
Montgomery, A. E., Jefferson
(APO San Francisco, Calif.).....Lt. Col., A.U.S.
Mulder, L., Sioux Center
(Sioux Falls, S. D.).....Capt., U.S.A.F.
Neagle, P. E., Dubuque.....
Nordin, C. A., Des Moines
(Lackland Field, Texas).....U.S.A.F.
Odell, J. E., Iowa City (Westlaco, Texas).....
Piburn, M. F., Preston.....1st Lt., A.U.S.
Robb, W. J., Cedar Rapids
(San Diego, Calif.).....U.S.N.R.
Ruble, R. L., Nevada (Camp Chaffee, Ark.)....A.U.S.
Schultz, M. H., Waterloo
(Weaver, S. D.).....Capt., U.S.A.F.
Shaffer, F. J., Iowa City.....Col., U.S.A.F.
Simonsen, M. H., Sioux City
(Oakland, Calif.).....Lt., U.S.N.
Smith, C. B., Iowa City
(Fort Jackson, S. C.).....Capt., A.U.S.
Storck, R. D., Dubuque
(San Francisco, Calif.).....Lt.
Stutsman, R. E., Washington
(San Diego, Calif.).....Cmdr., U.S.N.
Taylor, H. N., Iowa City.....
Tempel, P. F., Steamboat Rock
(Fort Riley, Kan.).....A.U.S.
Thistlewaite, E. A., Des Moines
(Riverside, Calif.).....U.S.A.F.
Thomas, J. H., Sibley (Austin, Texas).....U.S.A.F.
Tice, W. K., Iowa City
(APO San Francisco, Calif.).....A.U.S.
Tyler, D. E., Shenandoah.....U.S.N.R.
Vincent, J. F., Fort Dodge
(Clark Ridge, Ill.).....Capt., U.S.A.F.
Von Lackum, L. S., Oelwein
(FPO San Francisco, Calif.).....Lt. (j.g.), U.S.N.R.
Walz, D. V., Le Mars (Weaver, S. D.)...1st Lt., U.S.A.F.
Waldmann, W. B., Council Bluffs.....
Wehrmacher, W. H., Iowa City
(Oceanside, Calif.).....U.S.N.R.
Wheeler, R. A., Des Moines
(Fort Sheridan, Ill.).....1st Lt., A.U.S.
*Wilkins, D. S., Iowa City
(APO San Francisco, Calif.).....Capt., A.U.S.
Woolfolk, J. H., II, Waterloo
(Weaver, S. D.).....U.S.A.F.
Zeilenga, R. H., Orange City
(Kansas City, Kan.).....1st Lt., U.S.A.F.

* Deceased.

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Iowa State Medical Society

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Vol. XLI

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No. 9

SEVERE INJURIES TO THE HAND*

WALTER C. GRAHAM, M.D.

SANTA BARBARA, CALIF.

THE title of this paper must be given some explanation before proceeding. What would constitute a severe injury to one individual would be of little significance to another. The severity of the injury is determined by the age, sex, the occupation of the patient and the ability of the individual to rehabilitate himself and whether or not the major or minor hand is injured. Of course, there are many who cannot change occupations and must adjust themselves to the injury and the loss of a portion of the hand even though it impairs their normal mode of life. This is particularly true of individuals who live in rural areas where equipment is mechanized and requires a detailed function of hands for operation.

Wounds of the hand are produced by many different agents and are of the following types: Deep lacerating wounds which may include nerves, tendons and blood vessels; puncture wounds which may involve the deep structures; crushing and severe tearing wounds and burns. The extent of any of the above may vary from a portion of the finger to the entire hand or even a part of the forearm, with disruption of the control of the fingers. The loss of hand function is often seen in severe damaging injuries to the elbow joint.

The primary consideration in the treatment of practically all wounds of the hand is: How may I secure a primary closure of the wound? There are exceptions to this, of course, which include human or animal bites and certain types of burns. The time is past when we can justifiably leave a laceration or wound of the hand open, with tendons, bones and nerves exposed, if there is any possible way of closing the wound. The wound should be closed even if the ultimate treatment has not been carried out and we anticipate further reconstructive surgery. Occasionally, the vitality of certain tissue cannot be determined at the time of operation and at a later

date we may remove the devitalized tissues and apply a secondary graft or flap. In attempting to close wounds of the hand, obviously, the simpler procedures are those of choice. I want to bring to your attention a simple procedure that is often overlooked and neglected; namely, the use of a split skin graft which will adequately cover the denuded area. It is not difficult to split the skin from the upper arm and forearm with a razor blade, knife, or skin graft knife and thus secure a graft to cover the denuded area. A suture or two placed in the corners of the graft will hold it in position and it then may be covered with a piece of greased gauze and with adequate pressure it will heal without difficulty or delay. If tension is necessary to close any wound on the finger, it is probable that the suture will cut through as swelling progresses, thus leaving an open, gaping wound which could have been easily covered with a small graft. Following a partial amputation of the finger, we have all seen a painful stump due to allowing the wound to close by granulation and contracting scars. This could easily have been prevented by the use of the split skin graft. Also, the patient can be rehabilitated at a much earlier date as the graft is not sensitive to touch and pressure. The other advantage is that the graft gradually constricts and decreases in size as the other tissues adjust to replace the grafted area.

When a finger is severely crushed or the circulation is impaired, then amputation is necessary. It is better to amputate a finger that will be stiff in extension than to attempt to retain it because it is a hazard to safety for people who work with machinery and tools. The ideal level for the amputation of a phalanx is at the juncture of the middle and distal third, closing the skin over the end by using a longer palmar flap so that the scar will be placed well dorsally. Occasionally, a longer dorsal flap may be present and if so, to maintain length, it may be brought down and sutured palmarward and give satisfactory closure. The nerve ends should be pulled down and cut high in the stump so that the neuroma which forms on the tip of the nerve will be retracted in the soft tissue. The tendon must not be sutured over the tip of the bone. The flexor tendon should be pulled

* Presented at the One Hundredth Meeting, Iowa State Medical Society, Sioux City, April 23-25, 1951.

down and cut off and allowed to retract well up into the flexor sheath. This is particularly true of the profundus tendon because if it adheres in the sheath, it may inhibit the function of the adjacent fingers.

Let us return now and give further consideration to the circulation of the fingers prior to undertaking surgical correction. This evaluation sometimes is rather difficult as the circulation may be influenced by: the loss of blood pressure due to the patient being in shock; or by the bizarre position of the extremity or digit decreasing the blood supply; or by pressure resulting from the crushing of the tissue or an ill-advised tourniquet which has been used to control bleeding. A word in regard to tourniquets: I have never seen bleeding controlled by a tourniquet which could not have been better controlled by a large dressing placed over the wound and firm pressure applied by a circular bandage.

When areas of skin and subcutaneous tissue have been elevated and traumatized, the question of viability and whether or not these tissues can be used in closure presents itself. As a rule, if the fragments of skin are squeezed and the color returns, then there is adequate capillary blood supply to keep them viable. Often the viability of a flap must be determined by cutting the edges with a scalpel and watching for capillary bleeding. Wounds of the hands should be cleaned with adequate saline and detergents and possibly followed by the application of alcohol to the skin surfaces. I feel that merthiolate and other colored antiseptics should be avoided as they tend to make the problem of determining circulation much more difficult and are of no value if adequate cleansing of the wound has been carried out.

Severe fractures will often be present and it will be necessary to realign them to a position of function. Frequently they can be maintained in position by putting the hand in the well-known position of function. Occasionally, it may be necessary to maintain the position by transfixing with Kirschner wires through the medullary canal or by fixing them to the adjacent bone. Even when this method is used, a position of function is desirable and should always be kept in mind during fixation and when applying dressings. A four inch roll of gauze placed in the palm and the fingers molded about with the thumb in a position of apposition is an excellent dressing.

The most important single function of the hand is that of sensation. To maintain or restore sensation is the first thought in the primary treatment and the reconstruction. The replacement of bones and tendon structures to the damaged appendage is secondary to that of restoring sensation. The moving finger must be able to oppose some thick structure or thumb so that the function of pinch may be carried out with feeling. The simple process of opposing and pinching between the radial side of the index finger and the face of the thumb is far more than 50 per cent of the entire function

of the hand. If the index finger is missing, the above pinch will be carried to the middle finger, etc. Also, if sensation is impaired or missing on the index finger, the next finger is sought in the process of picking up articles and so forth. We must not sacrifice a living hand if there is a possibility of restoring function. No prosthesis or other artificial contraption has been devised that is comparable to a single finger and thumb which can be brought together in pinch and in which sensation remains.

Extensor tendons and the distal attachment of flexor tendons may be sutured initially but it is foolish for the inexperienced operator to attempt to suture the flexor tendons within the flexor sheaths or pulleys. The most experienced hand surgeons would not attempt to do so as they are practically always doomed to failure. A secondary repair is the procedure of choice.

Some consideration of severe burns of the hand may now be given. Initially, care should be exerted to carefully cleansing the hands with a detergent. The hand should then be bandaged with firm pressure. It should be placed in a position of function with the individual fingers separated from one another by vaseline gauze, mechanics waste or fluffy dressing. At the end of a week it is probable that a surgical debridement can be performed and a three-quarter thickness skin graft immediately applied to obtain adequate coverage of the burned surface.

Following surgical procedures pressure dressing without restricting bands should be applied to prevent pooling and laking of blood and serum and to control excess swelling, the dressing extended to the finger tips. If there is a good deal of post-operative pain and distress, the bandage should be freed as the pressure may be too great and is causing ischemia in the deep tissue. Continued pain indicates the possibility of infection in the area and this should be checked by inspecting the hand. It is not ill-advised to place drains into the deeper areas of the hand on the initial dressing and they may be removed at 24 to 48 hours. When the initial dressing is done, it is advisable to saturate the dressing so that it will not adhere to the graft. It is assumed that all patients with injuries of this type are put on adequate antibiotic treatment and the necessary antitoxins or toxoid boosters.

In conclusion, I would like to stress the following points: Initial treatment in the treatment of the hand should be directed toward primary closure of all wounds. The nerves should be sutured primarily if possible and if one understands the method of doing so because although the action of the hand is initiated in the brain, the fine functions are carried out at the tips of the fingers. Fractures should be aligned in a position of function and adequately fixed. The repair of flexor tendon should be deferred for secondary repair or grafting. An attempt should be made to obtain early skin coverage of the burned hand.

SERIOUS ANKLE FRACTURES*

By ROBERT M. WRAY, M.D.

CEDAR RAPIDS

INJURIES about the ankle joint are extremely common, and frequently present problems of considerable magnitude. The number of work days lost because of these injuries is tremendous, not to mention the decreased efficiency of the individual even after his return to work. In the difficult cases, the disability may well be permanent.

In Gray's *Attorneys Textbook of Medicine*, under United States averages, in 695 fracture cases involving the ankle, the average period of temporary disability amounted to 94.4 days. Residual permanent partial disability amounted to compensation benefits for an equivalent average of 16.9 weeks, in addition to the temporary disability. In other words, according to Iowa Workmen's Compensation standards, they carried an average of

in the more complicated ankle fractures, requiring manipulative or operative reductions. However, the simple undisplaced fracture at the ankle should not be belittled because, without adequate treatment, deformity can follow.

The case shown (Figure 1) was immobilized in good position according to his physician, but immobilization time was inadequate and with unprotected weight bearing, swelling and pain fol-

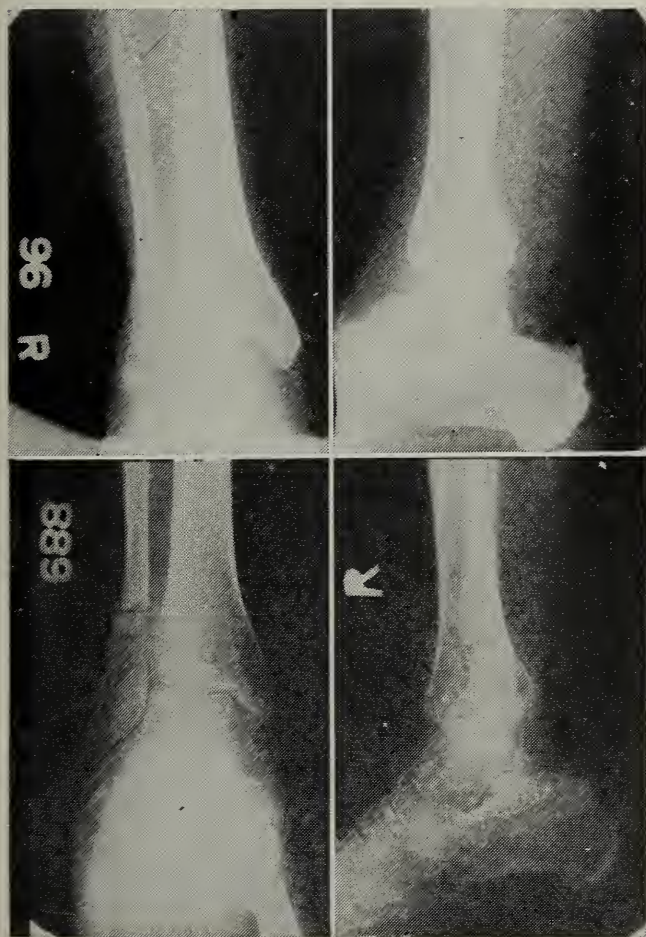


FIGURE 1. AP and Lateral films above show widened ankle mortise due to fracture deformity. This was corrected by osteotomy with excellent results.

about 13 per cent partial permanent disability of the foot.

It is not my purpose to discuss sprains or simple undisplaced fractures about the ankle, but rather to discuss the problems which confront us



FIGURE 2. Drawing illustrating toe freedom in casts for ankle fractures.

lowed. He reported for examination five months later with the x-ray above. Operative interference was necessary, which gave a good result, but disability time from beginning to end amounted to nearly one year. Not all cases of this type can be so easily handled and some require ankle joint fusion. The undisplaced fractures do require careful casting without undue padding and cast changes if they become loose.

It would be well to state here that it will be my plea throughout to use early protected weight bearing in casts. I feel that this is the key to lowering the disability time and to gaining better functioning ankles. These weight bearing cases do not develop the osteoporosis and stiffness of joints seen in the non-weight bearing cases. Therefore,

* Presented at the One Hundredth Meeting, Iowa State Medical Society, Sioux City, April 23-25, 1951.

it is a "must" that we get early protected (in plaster) weight bearing.

In the application of casts for these fractures, the toes must be free (Figure 2) so that they can be flexed and extended with the same principle in mind that is used in wrist fractures. On the plantar surface of the foot, the plaster should extend out to cover the metatarsal pad but should stop short of the toe base; on the dorsal aspect of the foot, the cast should stop short of the metatar-

use a skin glue to adhere the stockinette to the skin; then to lightly wrap with one layer of sheet cotton only the foot and ankle and apply a short leg cast with walking iron or with a rubber walking heel. During the acute stages of swelling and tenderness, it is often impossible to get a patient to bear weight prior to the third or fourth week, but weight bearing should be started as soon as possible. In the operative cases, good fixation at the ankle will allow a short leg cast early. A new cast can be used at the end of 10 to 14 days after surgery. This cast has the walking appliance immediately used and weight bearing is encouraged as soon as possible.

The classification of ankle fractures¹ is usually by the mechanism of their trauma, and is divided into four groups, (Figure 3) such as external rotation, forced abduction, forced adduction and direct trauma in the long axis of the tibia. The degree of disruption of the ankle joint is, of course, determined by the amount and angle of force; therefore, the injury can vary from an undisplaced fracture to a complete compound fracture of the ankle with marked comminution.

The treatment of any of the displaced fractures into the ankle joint requires an anatomical reposition of the fragments.² This is particularly true in any of the weight bearing joints. Therefore if you are not able to regain an anatomical position and restoration of the ankle joint by closed methods, open operative methods are mandatory.

Fractures at the ankle joint are emergency injuries; therefore, manipulative reduction at its best is performed early. This should be done as soon as the patient comes in and is x-rayed following the injury. If you delay until after swelling has occurred, the ankle is much harder to mold into its normal shape. More swelling will occur if the ankle is allowed to remain displaced than if early reduction were performed and complete immobilization immediately applied. Manipulative reduction requires the necessary traction to replace the joint surfaces in their proper contact, then the molding of the malleoli into their cor-

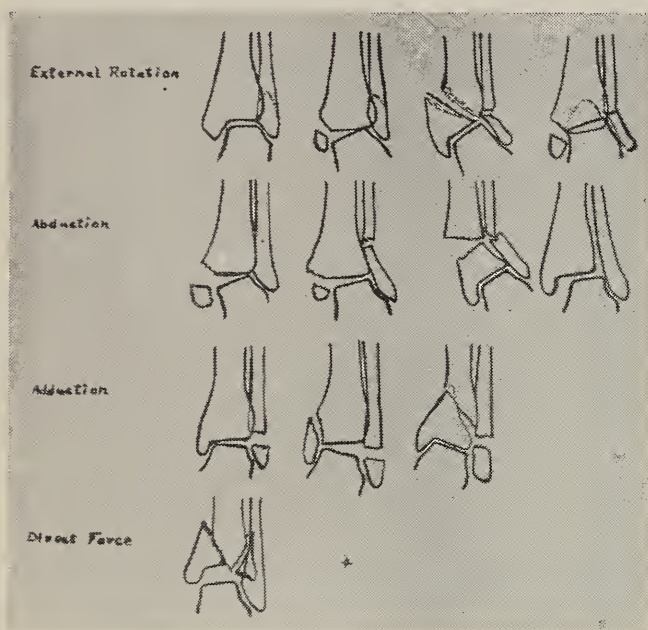


FIGURE 3. Classification of ankle fractures.

sal phalangeal joint. The ankle should be at neutral position, at about 90 to 100 degrees, with no forced valgus or varus, as I have seen little accomplished by these positions. In the cases requiring manipulative reduction, casts may necessarily need to be of the long leg type during the first three weeks of treatment in order to prevent external rotation of the ankle on the tibia.

At the time of application of the second or weight bearing cast, it has been our practice to

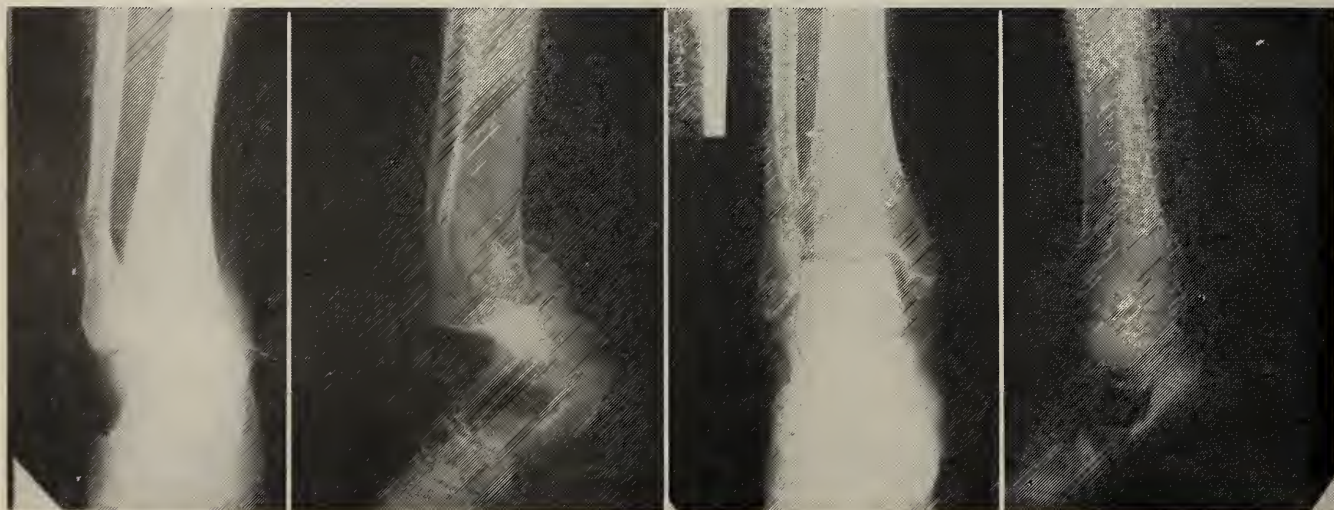


FIGURE 4. Tri-malleolar ankle fracture reduced by manipulation.

rected position. Many of these fractures can be accurately and well reduced by manipulative means. To check this point, I have reviewed the histories of 50 consecutive ankle fractures I had seen. It must be stated here that they were mainly referred cases, therefore the more easily handled ones had been sorted out. In the 50 cases, 15 were undisplaced and required no manipulative work and were only casted. In the 35 remaining there were four compound fractures which were, of course, handled by immediate open surgery. All of the remaining 31 were manipulatively attempted and successful reduction obtained in 15, leaving 16 cases in which open reductions were performed. I feel that most all cases should have an attempted manipulative reduction, as it is sometimes unbelievable how well the fragments will fit together into normal relationship. (Figure 4.)

It has been my practice to have these patients anesthetized on a hospital cart near the edge with the hip abducted and the knee allowed to flex to 90 degrees over the edge of the cart. The ankle can then be easily molded and smooth well-fitting molded plaster cast of the short leg type applied in the manner previously mentioned. If I am dealing with a bi-malleolar or tri-malleolar type fracture or a fracture caused by external rotation force, there is always the danger of external rotation deformity if only a short leg cast is used. Therefore, as soon as the short leg cast has set up, the leg is lifted onto the cart, and with the knee

flexed around 160 to 165 degrees, the short leg cast is made into a long leg cast by continuing about the knee. In the severe type fractures with disruption of the ankle capsule as shown by the subluxation or dislocation of the ankle, the case is hospitalized with the foot elevated and observed for three to five days prior to allowing the patient to get onto crutches. A recheck x-ray is usually taken the day following manipulation, and if the fracture is accurately aligned, no further work is necessary. If the fracture is not in anatomical replacement of the fragments, open reduction is advised and I usually wait 24 to 48 hours to be sure that bleb formation will not occur and that the swelling has reached its maximum or is subsiding. (Figure 5.)

In the operative treatment, the foot and ankle are prepared by soap and water scrub, painting with ether and then with the antiseptic. A tourniquet of the Esmarch or pneumatic type about the mid thigh is usually used, the medial malleolus being approached through a vertical incision along the anterior edge of the medial malleolus. The fracture is easily visualized and in a high percentage of cases, a flap of periosteum will be found, turned into the fracture line; this, therefore, blocking accurate manipulative reduction and allowing the fragment to move easily out of position. This fragment is accurately fitted into position so as to match both sides of the fracture line; the ankle joint has been opened and any free fragments that may be within the ankle can be visualized

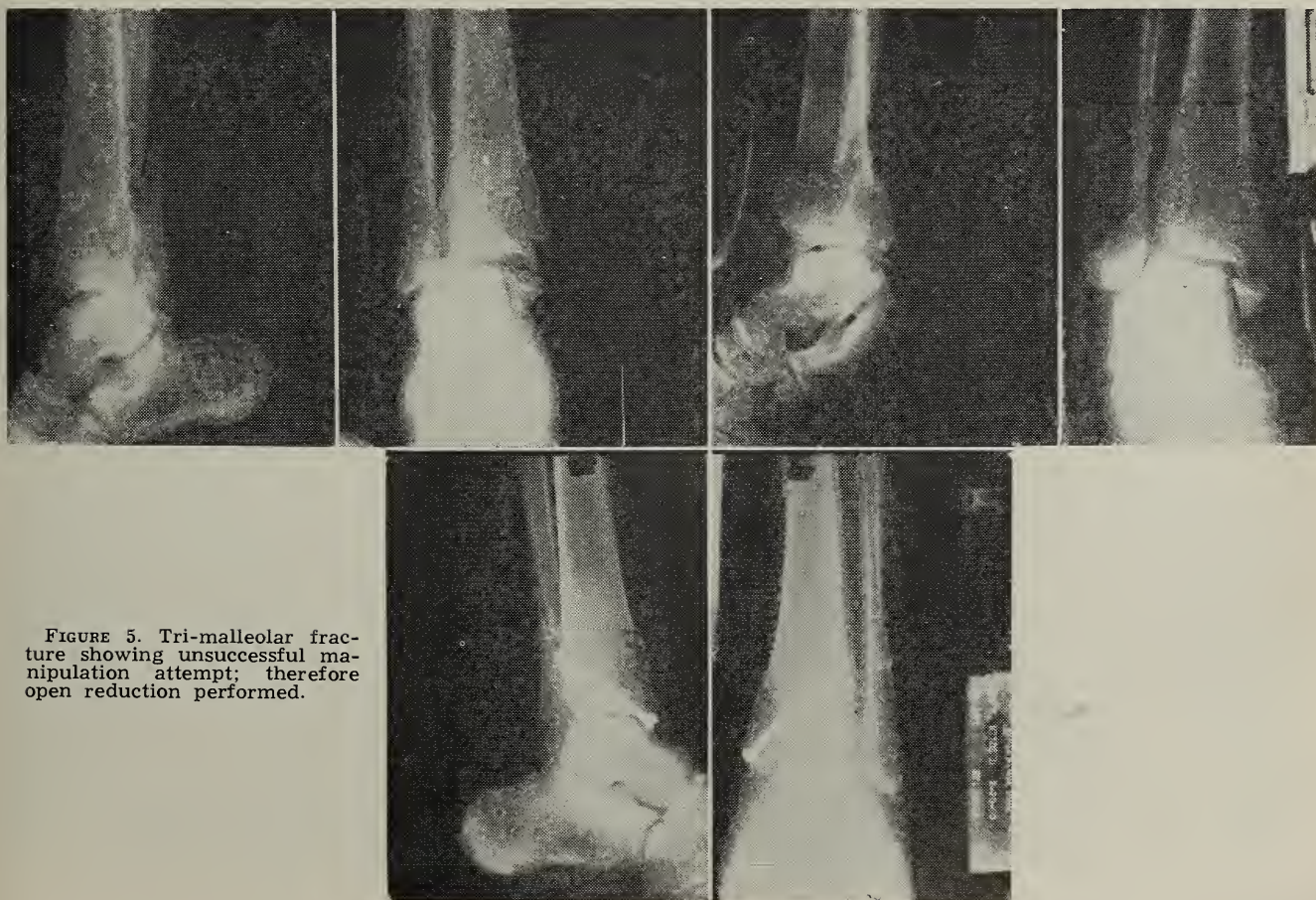


FIGURE 5. Tri-malleolar fracture showing unsuccessful manipulation attempt; therefore open reduction performed.

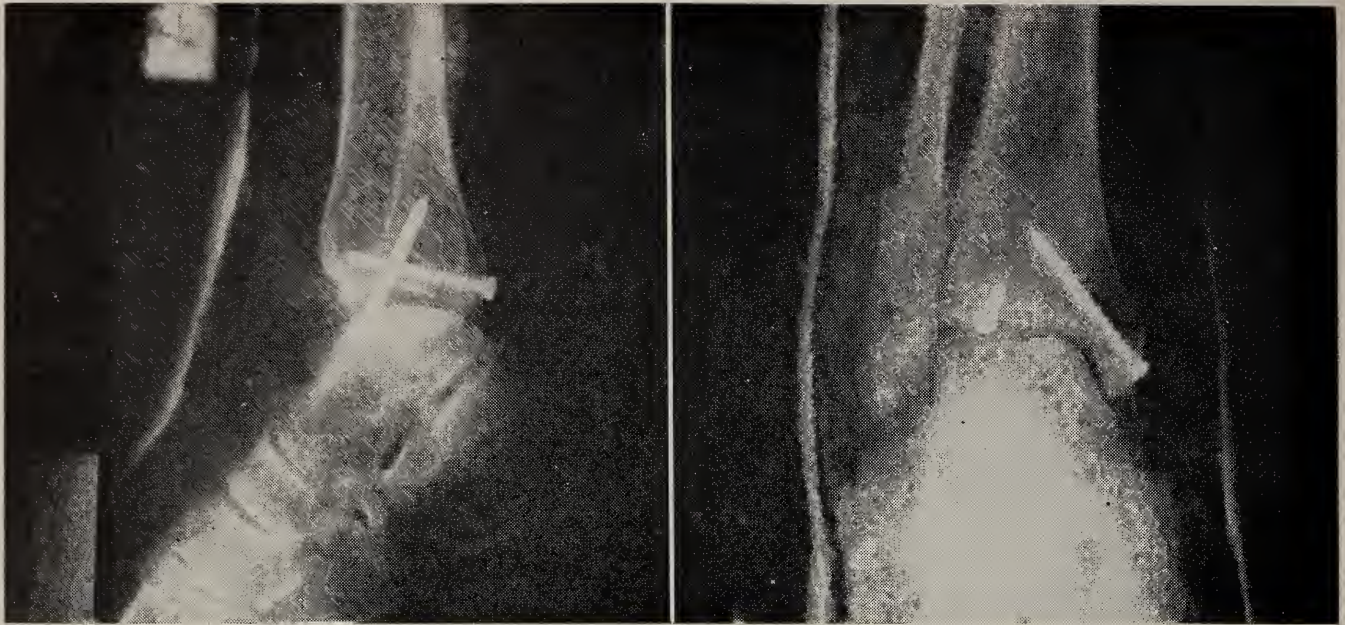


FIGURE 6. Tri-malleolar fracture requiring fixation of the posterior fragment.

and removed. I have usually used the stainless steel screw of coarse thread type, as I feel that a screw gives better and stronger fixation than the multiple Kirshner wire method. If the lateral malleolus should give difficulty, I do not hesitate to open through a second vertical incision and reduce the lateral malleolus, fixing it by either screw or wire loop into good position. If it is a fracture of the tri-malleolar type, with the posterior fragment displaced upward and the capsule ruptured so that dorsi-flexion of the foot does not bring down the fragment as previously determined by the manipulative reduction, the patient should be turned over nearly onto his abdomen on the operating table and the draping rearranged. (Figure 6.)

Then through an incision along the medial border of the tendo-Achilles, the posterior ankle joint may be exposed by sharp dissection. The fragment of posterior tibial lip is then levered down into position as determined by the upper portion of the fracture, as it is impossible to see into the ankle joint from posteriorly to determine from the articular surface when reduction has been ac-

complished. A screw is then placed from posteriorly-anteriorly of correct length, and this should give good strong fixation of the fragments. The tourniquet should be released prior to closure of all wounds, and the bleeding points tied. Following closure of the wounds, a light dry dressing is applied, then a new plaster cast. I have many times used the bi-valved cast which had been previously applied during the manipulation, because if good fixation has been obtained and the cast has been comfortable, this saves surgical time and will allow dressings until the wound is healed, at which time the short leg cast with the walking iron or walking heel will be applied.

Tibio-fibular separation at the distal tibio-fibular joint can occur with combinations of the previously described fractures or alone, and can be very difficult to treat. Fortunately, it is not seen too often. On many occasions, manipulative molding of the ankle will reduce this. However, on several occasions, I have been forced to do open operative work in these cases. I have used a screw across the tibio-fibular joint but have always had to remove it later, as these ankles seem to be

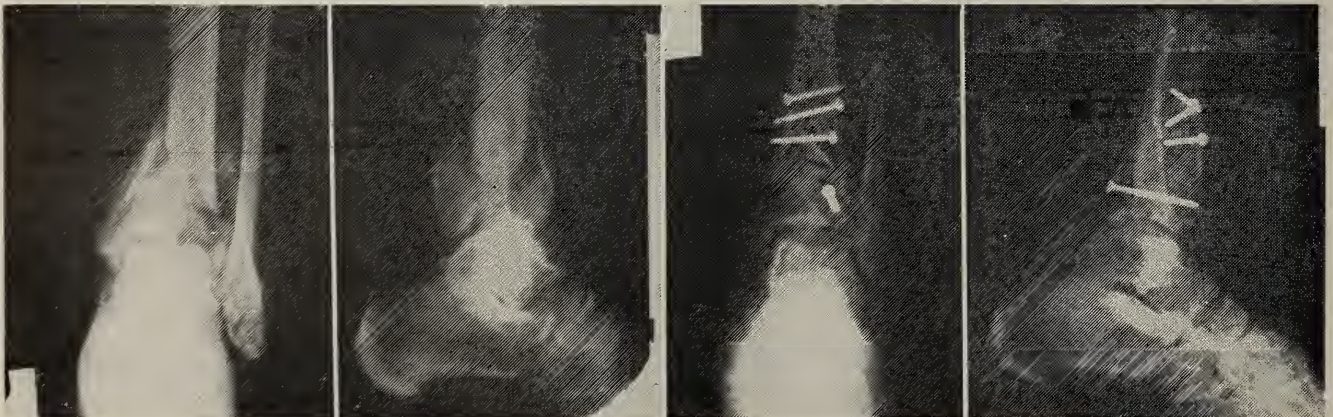


FIGURE 7. Compound direct force type fracture. Immediate open reduction.

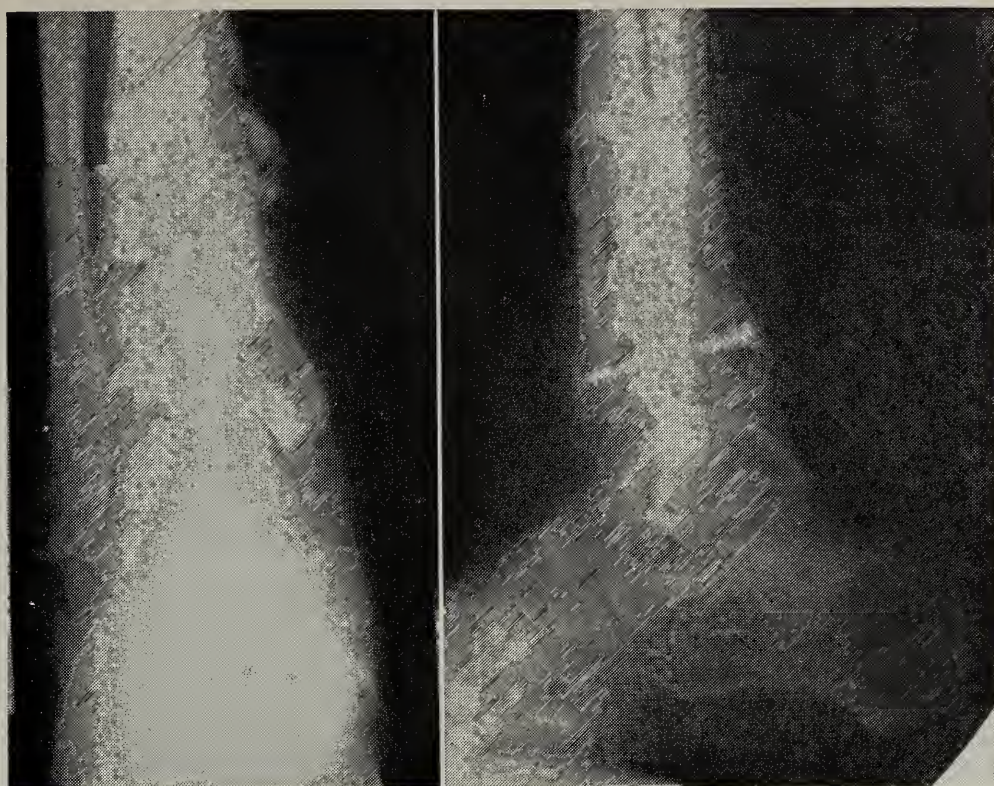


FIGURE 8. Same case as shown in Figure 7, showing broken screws on forcing weight bearing, and because of delayed union sliding bone graft had been done.

somewhat tender as long as the tibio-fibular joint is held immovable.

We realize that considerable traumatic arthritis can develop in a badly disrupted ankle joint fracture. However, I believe that the best way to hold this to a minimum is the accurate re-position of fragments with early weight bearing in the protective plaster.

Compound fractures of this same type require, of course, the emergency debridement and cleansing of the wound. (Figure 7.)

They should then be treated as you would a clean fracture, with an immediate open reduction, followed, of course, by antibiotic therapy and close supervision. I do not hesitate to use the metallic fixation. Fractures due to direct force in the line of the tibia give a more difficult surgical problem than the other type of fractures. Usually these, if comminuted, require open work, and will tax the initiative of the surgeon. In this type of case, it is problematical that you will be able to get the early protected weight bearing that is possible in the bi-malleolar and tri-malleolar type. I have broken a good number of screws trying early weight bearing. (Figure 8.)

Therefore, because of the ensuing time without weight bearing, considerable osteoporosis will often follow and the disability is greater than in the other group.

You may ask about further data on the 50 cases previously mentioned. I would like to consider their disability time as for a compensation case (some were compensation cases) and have tried to evaluate them as such. In other words, when

were they able to do prolonged standing and walking and return to their occupations. I realize that they required longer than the time listed before their partial temporary disability ended. In the fractures of one malleolus only, with no displacement, there were 13 cases, and they required a total disability time of seven and one-half weeks. Where reduction of any type of one malleolus was necessary, there were 10 cases, and their disability time was about 13 weeks. There were seven bi-malleolar cases, averaging 13 weeks of total disability. There were 17 tri-malleolar cases, averaging 16 weeks. There were three direct force fractures in this series, and all were compounded. One returned to work in about 18 weeks; one required months because of wound drainage and infection, followed later by necessity of bone graft with good result. I do not know the total disability time in the one remaining case.

In the 16 cases operated electively there were no wound infections, and even though the fractures were of greater magnitude than the 15 successfully reduced by manipulation, their total disability time was little longer. This holding down of disability time in the operated group was brought about, I feel, by early weight bearing in plaster because of good solid operative fixation.

SUMMARY

- (1) Accurate anatomical reductions of ankle fractures are essential.
- (2) Early weight bearing in protective plaster casts is a "must."

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PROBLEMS IN THE MANAGEMENT OF
DIABETES MELLITUS*

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THERE ARE an estimated 1,500,000 to 2,000,000 diabetic patients in the United States. It is further conservatively estimated that 25 per cent of the total population have diabetic relatives. It is therefore obvious that the physician cannot ignore the influence of diabetes mellitus on his patient population. That many problems arise which may involve the entire scope of general medicine directly or indirectly has long been recognized. Less well known is the presence of alterations in the metabolism of fat and protein in addition to the long recognized inability of the diabetic to properly utilize glucose.

Knowledge of diabetes acquired in the past has solved many problems but longer life has permitted others to appear. In addition, all of the illnesses that afflict the general population can occur among the diabetic population.

Every diabetic patient will have an acute complication at sometime. Whether it is streptococcal pharyngitis, pneumonia, appendicitis or the common cold it necessitates appropriate therapy for the condition and often increased amounts of exogenous insulin until the acute complication is overcome. Following this, previous insulin requirements, well-being and physical status may be resumed.

This is in sharp contrast to the chronic complications which include degenerative vascular lesions with their effects on the general vascular system, coronary arteries, vessels in the feet and legs, kidneys and eyes. These chronic complications are not easily reversible processes. They usually cause no marked change in the insulin requirement of the diabetic. They often progress once they are established and death may result from these changes when the diabetes itself is causing no concern. The chronic complications must therefore be approached with prevention as the primary goal, although there is evidence that adequate therapy will in some instances cause remission of lesions.

Many of the chronic vascular complications noted among the diabetic population also occur in the general population, but they appear earlier when diabetes is present.

At the University Hospitals, the Department of Internal Medicine has long had the opportunity

to cooperate with the Departments of Surgery, Ophthalmology, Obstetrics and Gynecology, Urology, Otolaryngology, Orthopedics, Neurology and Dermatology in the care of men and women with proven and suspected diabetes mellitus. It has therefore been possible for us to observe the patients with diabetes as you refer them to many different services of the University Hospitals. These referrals are often necessitated by unrelated disease, acute complications or chronic degenerations associated with diabetes. Joslin¹ asserts only 1.9 per cent of the diabetic patients die of their disease and therefore the unrelated disease, acute and chronic complications actually constitute 98.1 per cent of the deaths. It is the associated or complicating disease that is responsible for many diabetic hospital admissions.

DIABETIC HOSPITAL POPULATION

In a 12 month period from March 1, 1950 to March 1, 1951, a total of 244 men and women with diabetes mellitus were admitted to a hospital service other than the Medical Service.

As is true of our hospital population, most of these people were more than 60 years of age. Table 1 illustrates the number of patients in each

TABLE 1
DIABETICS WITH COMPLICATIONS

Age Groups	No. Patients
10-20	4
21-30	10
31-40	13
41-50	25
51-60	42
61-70	68
71-80	76
81-90	6
Total	244

10 year age group from 10 years of age. Fourteen were from 16 to 30 years, 13 from 31 to 40 years, 25 from 41 to 50 years, 42 from 51 to 60 years and 140 were past 60 years of age. Thus more than half were in the past 60 year age group.

The problems encountered in this group of diabetic subjects were many and varied. It would be all but impossible to focus our attention on all of them.

Our pathologists have often called our attention to the large number of specimens composed of amputated portions of the lower extremities which they are called upon to examine. A great many of these feet and legs are separated from diabetic patients by our surgeons in order to relieve suffering or as a life saving measure. Almost always this is the result of vascular insufficiency with infection and gangrene.

Table 2 shows that of the 244 diabetic subjects, 112 or almost half had evidences of vascular insufficiency in the legs and feet. Table 3 shows the 51 patients who had gangrene of a portion of the toes, feet and legs. This was 20 per cent of the total. Amputations were carried out during this one year period on 42 or 17 per cent of the dia-

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** From Department of Internal Medicine of the College of Medicine of the State University of Iowa and the University Hospitals.

betic patients as shown in Table 4. Some of our 42 patients had portions of more than one extremity removed during the past year. It is worthy of note also that while evidences of vascular insufficiency were present in 56 men and 56 women, gangrene and amputations occurred twice as frequently in men. Thirty-four of the 42 patients with amputations were past 60 years of age.

TABLE 2
DIABETICS WITH COMPLICATIONS

Arterial Insufficiency			
Men	=	56	
Women	=	56	
Both	=	112	
% of Total	=	45%	

TABLE 3
DIABETICS WITH COMPLICATIONS

Gangrene			
Men	=	32	
Women	=	19	
Both	=	51	
% of Total	=	20%	

TABLE 4
DIABETICS WITH COMPLICATIONS

Amputation			
Men	=	28	
Women	=	14	
Both	=	42	
% of Total	=	17%	

Those with vascular insufficiency were by no means confined to those admitted to our Surgical Service, rather unless gangrene was present they were to be found in one of the other hospital areas. Likewise some with a small localized area of gangrene were admitted because of a more serious complication. It was possible for several complications to be present at the same time. Therapy would then be directed toward the most urgent complication unless coincident therapy could include several or all of the complicating factors.

DIAGNOSIS OF VASCULAR INSUFFICIENCY

Patients had vascular insufficiency if they fulfilled one or more of the following criteria. Usually more than one of the symptoms and signs would be present. Intermittent claudication appearing after a brisk walk over a short distance. Pain especially in the toes at rest. Pain of sudden onset often indicated complete occlusion of an artery or when insidious in onset gradual arterial insufficiency. Pain after minor trauma to the foot was always viewed with suspicion and careful study often revealed other evidences of arterial insufficiency. Examination often revealed trophic changes of the skin, muscles and toenails. There was often thickening and ridging of the nail with its frequent loss following minor or no apparent trauma. The skin was thin with evidence of flaking of the epithelium and usually absence of hair over the portions of the toes and feet with in-

sufficient blood supply. Fissures of the skin often would occur and result in pyogenic infections. Lymphangitis was present at times, often being the result of infection originating in cracks between the toes. This cracking could be attributed to fungus infection of the feet in many instances.

When the leg was lowered, the portion with arterial insufficiency was bluish-red and when elevated for 30 seconds or more the area was almost white. The feet were cold over the areas with insufficient arterial supply and the contrast of one foot as compared to the other often provided striking evidence of an early insufficiency. A "line of demarcation" from warm to cool was detected at times. Frankly gangrenous toes could often be seen. Careful palpation for the dorsalis pedis, posterior tibial, popliteal and femoral arteries often revealed impaired or absent pulsations.

The degree of pulsation of arteries and changes in temperature of the tips of the toes were the most important of the clinical examination methods of appraising the adequacy of circulation in the foot and leg. Many devices have been devised for aiding the physician in his appraisal of vascular insufficiency of the legs. None are a substitute for careful clinical examination of the extremities.

Gangrene, when present, usually involved the peripheral and protruding portions of the foot so that toes, the heel, metatarsophalangeal joints of the great toe especially if a "bunion" was present and the malleolar regions were common sites of origin. The toes and heel were particularly susceptible to gangrene and a gangrenous heel often meant loss of the entire foot while involvement of the toes might allow the surgeon to save the heel for walking.

TYPES OF ARTERIOSCLEROSIS

The pathologist divides arteriosclerosis into three types: (1) Atherosclerosis, which is essentially a disease of the intima, (2) medical sclerosis and (3) arteriolar sclerosis. These types are all found both in diabetics and non-diabetics but they tend to occur much earlier and more extensively in diabetics. It is atherosclerosis with its intimal plaques that most concerns us in arteriosclerosis obliterans involving vessels of the feet and legs. Medial calcification occurs frequently in the arteries of the lower extremities. Medial calcification is readily demonstrable by x-ray but rarely narrows the vascular lumen and therefore may be present without gangrene or vascular insufficiency. It must be remembered then that x-ray evidence of calcification of vessels is not strict evidence of vascular insufficiency. Medial calcification often accompanies the intimal atheromatous plaques which form on the wall of arteries of the legs. Intimal atheromatous plaques are the lesions most often responsible for arteriosclerosis obliterans. Where sufficient reduction of vascular supply occurs, intermittent claudication, coldness of the feet and finally localized gangrene may occur.

FACTORS INFLUENCING ARTERIOSCLEROSIS

Atherosclerosis is not static but progresses at an irregular rate probably dependent on many factors. It would seem to be directly related to obesity, the duration of diabetes as well as to poor diabetic control in some instances.

The incidence of arteriosclerosis would seem to be higher among diabetics than in the general population and evidence indicates its earlier occurrence among diabetics.

Our Department of Surgery supplied us with the data in Table 5. This shows a total of 129

TABLE 5
LOWER EXTREMITY AMPUTATIONS

January 1, 1950 to December 31, 1950	
With Diabetes	61
Without Diabetes	68
Total	129

lower extremity amputations done at the University Hospitals during the one year period January 1, 1950 to December 31, 1950. Sixty-one or almost 50 per cent of the 129 amputations were on patients with diabetes, indicating that our lower extremity amputations are frequently associated with diabetes.

Multiple amputations are responsible for the apparent discrepancy in total number of amputations between this and the above mentioned series. Often removal of a toe would be followed by transmetatarsal, and then leg or thigh amputation. Amputations on both lower extremities were necessary in some instances also.

Dry and Hines² have shown atherosclerosis (arteriosclerosis obliterans) to be 11 times more common among diabetics than non-diabetics. Dolger³ showed how few diabetics escape vascular lesions after 15 or 20 years of the disease. White⁴ and associates demonstrated the high incidence of vascular lesions in young diabetics.

Arteriosclerosis has been shown to occur in diabetics under 30 years old when diabetes is of long standing. Evidence presented by Hardin, Jackson, Walker, Hendricks and Kelly⁵ in their study of young subjects with diabetes of 15 years or longer points toward poor control as one of the factors responsible for an increased incidence of arteriosclerosis. Naturally, so called milder forms of the disease are more easily controlled and many other factors may be influencing this apparent ease of control in certain diabetic subjects. The evidence is good enough that we should strive for good diabetic control with every diabetic patient.

How can these lesions best be avoided? Barach⁶ lists many contributing factors in the etiology of arteriosclerosis. Some believe it to be primarily a metabolic disease and cite man's ability to excrete or destroy cholesterol in only limited amounts as partial proof that it accumulates in blood and tissues. Leary⁷ contends the excess cholesterol combines with fatty acids to form

cholesterol esters which in turn find their way into the intima of the arterial walls as atheromatous plaques. Wilens⁸ considers nutritional factors of great importance and records necropsy evidence that terminal weight loss is often associated with reduction in degree of atherosclerosis. In fact, he records evidence that weight loss of only a few months duration may be sufficient to cause reduction of blood fats. Wilens believes some of the excess lipid material in the atheromatous plaque of the vessel wall may be produced by man and not ingested as such.

Endocrine disturbances have not been markedly implicated in the production of atherosclerosis but the cholesterol reducing effects of thyroid extract among patients with myxedema has long been recognized. Kepler and Locke⁹ recently mentioned an adrenal cortical hormone, 11 dehydrocorticosterone (compound A of Kendall) which has an effect on the fat metabolism of certain strains of mice. Its effect on fat metabolism in humans has not yet been reported.

Age, while important, is not the all inclusive cause of arteriosclerosis. Many are the examples of men of middle age with marked vessel changes and those past 80 years with minimal findings.

Sex has long seemed to be important in predisposition of arteriosclerosis. Dock¹⁰ called attention to the increased thickness of the coronary artery intima in male stillborn infants as compared to female stillborn infants. In non-diabetics there is more peripheral vascular insufficiency, gangrene and subsequent amputations in men than in woman. Among diabetics, however, the incidence of vascular insufficiency is about the same in both sexes. Our data show this as well as the fact that only twice as many of our diabetic men had amputations as our diabetic women. Other larger series have shown an almost equal incidence of gangrene and amputations among both sexes. We can point out the greater incidence of obesity among diabetic women as a possible predisposing factor.

That inheritance is important cannot be overlooked. Wilkinson^{11, 11a} in studies in essential familial hypercholesterolemia including four generations and 350 individuals noted 35 with a high blood cholesterol and evidences of vascular disease. This, with the observations many practicing physicians can make independently, indicate families with a high incidence of "strokes," "bad feet" and similar evidences of a damaged vascular system. Conversely, other families will live to a ripe old age. Boas, Parets and Adlersberg¹² also found an increased incidence of atherosclerosis in the families of 122 individuals with proved coronary atherosclerosis before the age of 50.

Life insurance statistics show that over-nutrition and resultant obesity is associated with arteriosclerosis and a shortened life span.

When presented with this evidence the most logical site for therapy would seem to be an attack

on the factors influencing atherosclerosis among the diabetic population.

THERAPY OF ATHEROSCLEROSIS

To reduce the incidence of atherosclerosis, good diabetic control with avoidance of marked hyperglycemia and glycosuria is important. Most diabetic texts state this as their most important therapeutic recommendation. A survey among diabetic patients at the University Hospitals before and after good control with Daum and Hoyman¹³ showed more normal blood fat levels after adequate insulin and diet adjustments had been made. If the diabetic has considerable arteriosclerosis, hyperglycemia and glycosuria, better control, while it is important, should not be attempted so rapidly that severe insulin reactions and the presence of coronary artery disease or other complications are overlooked. It should never be forgotten that once normoglycemia and no glycosuria occur, exogenous insulin requirements usually are reduced.

We do not believe good diabetic control is achieved in diabetics until the blood fat content is in the normal range.

If obesity is present, weight reduction is carried out. During the last two years, we have largely abandoned the high-fat diets that are recommended by some. We prefer to use protein in excess of 100 Gm. a day, carbohydrate of 150 to 250 Gm. and fat of 50 to 70 Gm. The higher carbohydrate intake is often necessary to reduce increased blood fat levels. In case additional calories are needed, we allow additional protein and carbohydrate with minimal increases in fat. Men doing hard manual labor appreciate these generous protein allowances. Further, the release of glucose from protein by gluconeogenesis allows a more even distribution of glucose throughout the day and helps to avoid hyperglycemic peaks when long acting insulin is used. Duncan¹⁴ and others have recently adopted similar policies preferring to avoid the high-fat diets which were conceived in the pre-insulin era and which often have persisted in spite of adequate insulin supplies.

The use of low fat-low cholesterol diets is advocated by Morrison¹⁵ and others as a method to reduce the fat content of the blood in persons with arteriosclerosis. The severe restrictions imposed by use of the low cholesterol diets will cause many to be unable to follow them. Our experience indicates only a few who will fail to respond to the more easily followed high protein, adequate carbohydrate, low (but not severely restricted) fat diet in the presence of adequate exogenous insulin with a more normal blood fat level.

When abnormal fat metabolism persists, we often supply one of the lipotropic agents such as choline and on occasion can note a more normal blood fat content following its administration.

Special "diabetic foods" are not necessary except for water packed fruits. Too often patients are misled into buying unnecessary "special

foods." Brown or whole wheat bread has approximately the same carbohydrate content as white bread. Questions necessitating these replies and many other questions relative to diet are often passed over the back fence as friendly advice. The diabetic must have a clear understanding of the nature of his diet and a ready source of reliable information relative to it.

LOCAL CARE OF THE LEGS AND FEET

Local care of the feet can be practiced from the beginning of initial discovery of diabetes. The generally established measures of foot care are

TABLE 6
FOOT CARE

- | |
|-------------------------------------|
| 1. Warm (never hot) foot bath daily |
| 2. Cut nails straight across |
| 3. Avoid injury to feet |
| 4. Never apply heat to feet |
| 5. No constricting garters |
| 6. Proper fitting shoes |

well-known to physicians. They include the following:

- (1) Warm (never hot) foot baths every evening.
- (2) Use lanolin on the skin after bathing, rubbing alcohol if the skin is too soft.
- (3) Cut toe nails straight across beyond the end of the toe.
- (4) Avoid injury to the toes and feet.
- (5) Never apply heat to the feet.
- (6) Do not wear tight garters.
- (7) Proper fitting shoes.

Some physicians cite their experiences after unilateral leg or thigh amputation as evidence that good diabetic control and foot care will prevent loss of the opposite leg. This is true in many instances. All too often, however, gangrene appears in the opposite foot and bilateral amputation is the inevitable result. Further it must be remembered that one of the 1,000,000 unknown diabetic patients may be the person who traumatized a foot. Constant awareness of this by the man or woman with a poorly healing sore on the foot may bring them to the physician so that spread of infection and gangrene will not result. We might facetiously theorize as to what changes might occur in the incidence or distribution of diabetic gangrene of the feet if man walked on his hands or perhaps only if he washed the hands as often as the feet.

Continued good diabetic control, weight reduction and control when indicated, and good local care of the feet should be continuously practiced in attempting to reduce the incidence of incapacity and amputations among the diabetic population.

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PRESENT STATUS OF PSYCHIATRY IN IOWA*

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Psychiatry in Iowa has come of age. For the first time in the long history of the State Medical Society, there is now a Committee on Mental Health, starting in 1950. For many years the number of patients ill with mental disorders outnumbered every other disease process, if not all others combined. Yet the physicians in Iowa were so little concerned with these frequently malignant disease processes that there was not even a small official group in our State Medical Society that indicated a realization of the magnitude and extent of these illnesses.

That was not because Iowa did not have some excellent psychiatrists. As a matter of fact, to list the outstanding men who went from Iowa to build famous institutions and become leaders in the new field of psychiatry sounds like a page from *Who's Who*. Dr. Albert Barrett, first Director of the Psychopathic Hospital at the University of Michigan, Ann Arbor, an outstanding neuropathologist, teacher and psychiatrist; Dr. Albert Klein, first Commissioner of Mental Disease for the State of Massachusetts and organizer of their state hospital system; Dr. William Bryan, Superintendent of Worcester State Hospital, an outstanding research center, even if it were a state hospital, and Dr. Lauren Smith, Director of the Institute and Department for Mental Disease of the Philadelphia Hospital, are to mention only a few. Many

others received a part or all of their training first in our state hospitals—some others later in the Psychopathic Hospital.

Perhaps one would say that it was the fault of the psychiatrists for not making themselves heard. I also think it is true that in the older days, state hospital psychiatrists lived in institutions that were not close to medical centers, and their staffs tended to isolate themselves, being long distances from the nearest town and with an interest in a type of case other physicians neither understood nor wanted. But state hospital staffs are no longer isolated, both because of the better and easier transportation and also because the layman insists on knowing about his own mental difficulties. After the first World War, but more especially after the last war, thousands of men learned that their peculiarities could be treated as well as their physiology or anatomy. That is an important point because we forget that personalities are important functions of the human organisms as much as the physiology. As a matter of fact, we all prefer to think the only purpose of our other functions and structures is to serve and make possible our personalities. That is what we are and in that function lies the meaning and purpose of our lives. Yet—and here is the paradox—that function of the human organism which is of the highest and the chief value in life is the one which has been so sorely neglected by our own profession. There are many reasons. The "minding function" or "mind" (as we call it for short) has never been of the type which lent itself particularly well to scientific exploration and laboratory analysis. Yet Thomas Salmon, the first director of the Boston Psychopathic Hospital, was firmly convinced that by neuro-anatomical studies of sufficient care, the understanding of abnormal human behavior could be explained. As it turned out, the instruments were not fine enough, nor are they today, although we are approaching it with microdissection of cells, electroencephalography and the electric microscope. So man has had to be studied for his behavior in molar rather than molecular terms. And this, in the age of the discovery of bacteria, salvarsan, asepsis, immunity reactions and the antibiotics, looked terrifically unscientific and non-medical. As a result, treatments grew up that depended upon verbal communication. Not that words are not powerful agents—witness the reaction of any individual to words of threat or praise. It is that everyone feels he uses words to affect others—no matter whether it is the corner loafer or the corporation executive. The last few decades have brought us refined methods of verbal dosages and a better understanding of how the resulting emotional reactions can be handled therapeutically. For the more severe disorders, insulin coma and electrotherapy were welcome adjuncts, but have revealed little to us about the man himself. Lobotomy, which surgically separates various portions of the brain from each other, has had a use-

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ful application in hopeless cases rather than in more acute reactions. Perhaps careful studies of the pathways destroyed will lead to some clues.

But more than these technics, there has been increasing indication that physicians and the public have really been willing to look at the patient whose personality is disordered in a somewhat more sympathetic light. How many times have you non-psychiatrists said in disgust that "so-and-so was a chronic neurotic" or "he's crazy" and then washed your hands of the whole situation as though it was not a physician's concern.

Of course, we psychiatrists did not give you much information when you were in medical school about people themselves, nor were we allowed to. Somehow or other, there were still shadows left over from the days when mental aberrations were considered outside of the physical-metaphysical as we might call it.

Yet what is closer to any man's desire than the maintenance of his own integrity as a person? He would much rather lose a leg or his stomach than to lose that control of self which may deprive him of his legal rights, his family and his freedom. I have often wondered if one of the reasons we physicians shied away from psychiatric disorders was that it might be such a constant reminder of our own emotional perturbations and we saw ourselves in them so clearly that it might heighten our anxiety about losing our own self-sufficiency. We all tend to feel, sometimes, that if a patient does not respond to the correct treatment, perhaps he is wilfully not wanting to respond. In other words, we project our own failures on to our patients. There is no area in life where mankind, whether doctor or layman, feels more insecure than in his mental and emotional life. Look at the people who blush, tremble, have stagefright, are hesitant or timid. Then, too, many laymen or physicians are afraid of someone who is considered no longer responsible—afraid that such patient may carry out impulses which we ourselves may have wished to accomplish, but have managed to keep under control.

Now let us turn to what seems to be happening in Iowa. First, we should look at our huge state mental hospitals. There are four of them—at Independence, Mount Pleasant, Clarinda and Cherokee. In addition we have at Woodward a hospital for epileptics and feeble-minded and another institution for the feeble-minded in Glenwood. These hospitals are run by the Board of Control, which also looks after the prisons, reformatories, training schools, soldiers' home, children's homes and orphanages. A tremendous job for any board, let alone a small one. The dual system of having a business manager or steward of each hospital appointed by the governor and responsible to him was finally abolished. It had made an impossible situation for some of our superintendents. No organization can have two masters. Now he is under the medical superintendent as he should be.

Another forward step taken four years ago was the appointment of a psychiatric director to the Board of Control, so that they would have an experienced psychiatrist to consult concerning the many technical phases of caring for the mentally ill.

Without any criticism of the Board of Control, for I think we have one of the best now that we have ever had, it was disappointing to me that the care of the mentally ill was not placed under a new and separate department of mental health, with a physician and psychiatrist as commissioner or director. I am sure Dr. Charles C. Graves, Jr., the present psychiatrist attached to the Board of Control, had few obstructions to the way in which his advice was carried out. If he did have, he never would have been able to bring about the improvements he has. But it only seems reasonable that in as highly a specialized field as mental health and disease, as in public health, a physician should be in charge.

We still have overcrowding in our state hospitals, much of it due to the influx of elderly people who have become mentally ill and unmanageable due to senility and arteriosclerosis. We frequently hear it bandied about that these old people should be cared for at home. But have you ever tried to manage an active senile individual during the night in your own home? If you have, you will recognize it is a major problem. Overcrowding is also due to inadequate staffs which are unable to devote the time required for the treatment of patients to hasten their recovery.

This matter of inadequate staffing is never going to be easy to solve. In the first place, only a few doctors are trained to do psychiatry, although since the war the numbers are increasing. Most of these trained young men are going into private practice in urban areas where their income is better and where they see earlier cases which are more amenable to treatment. One must also admit candidly that the state hospital psychiatrist does not have the most attractive or cooperative patients to deal with. Many are hostile, suspicious, assaultive, sad and complaining—and not influenced too much by the common methods of control. They may say and act out unpleasantly, disturbing antisocial feelings, with little regard for the niceties of life; many run long, complicated, chronic courses. There is nowhere else a state hospital physician can send a patient if he is not well. Perhaps this limits the number of physicians who are available.

It has also been too true that salaries in our state mental hospitals are inadequate. Rather than paying less than what can be earned in other fields of psychiatry and medicine, obviously there should be both some monetary and economic advantage to take up this work which has none of the advantages of a general hospital and private practice. In that way we could set standards and secure the better trained people, the more experi-

enced, and they in turn attract and make possible residency training programs. The Veterans Administrations in many places have shown that this can work.

We are fortunate in having some exceedingly able and competent men who are superintendents of our mental hospitals, but they are for the most part badly handicapped by lack of trained personnel, not only psychiatrists, but nurses, social workers, psychologists and others.

During the past four years, we have seen an interesting new development taking place in our State Hospital System. This has been a special interest of both Governor Beardsley and the present Board of Control. I am referring to the so-called "screening centers" or more properly "therapy units." Independence has the most active one at present, and a building has been completely redecorated and refurnished tastefully and comfortably. The patients come voluntarily and receive treatment, particularly electrotherapy and insulin subcoma. Not much psychotherapy can be carried out, because of the lack of trained staff. However, a beginning has been made in developing group discussions among the patients, the acting out in plays of their problems and also the services of ministers and others interested in human problems. Although this is only a beginning and some of it is superficial, yet it is changing the attitudes of patients and particularly of the relatives. An out-patient service also has been added, and people are learning, as well as doctors, that patients can go to a state hospital, be examined, treated and cared for without being declared "insane." There are many conditions—for example, depressions and certain severe neurotic conditions—where the individual does not lose his personality, integrity and judgment. Such units will serve their immediate area and in time can function more and more as mental health centers. Dr. Max E. Witte at Independence has supplied the enthusiasm and drive necessary to start these new projects and bring about many physical improvements. But here again, securing and keeping personnel is a major problem and one to discourage even the most enthusiastic. Dr. Norman D. Render at Clarinda and Dr. Willard Brinegar at Cherokee are developing similar programs. At Woodward State Hospital, Dr. George L. Wadsworth has made great improvements, adding to his medical and professional staff, developing laboratory facilities and carefully re-examining all of his patients. This has resulted in a much reduced waiting list and the transfer of a number of patients either by sending them to another institution more suited to their needs, or in some cases getting the families to take more responsibility. These men need all the support this Medical Society can give them in the way of encouragement, legislative support and interest. It is important that every physician should visit one of these hospitals and see for himself what has been accomplished against tremen-

dous handicaps and what a lot still remains to be done.

It was said only a few years ago that our state hospitals would finally become places where only the chronic and hopeless would be cared for. I, for one, am pleased that this prediction does not seem to be coming true. If we ever want to attract public interest and sympathy, bring competent and adequate staffs and develop research in them, it will only be accomplished in an atmosphere where there is hope, enthusiasm and patients being helped. I think we should watch and encourage this increasing participation of the state hospitals in the mental health of the state.

Another development should be recorded here, as it is a forerunner of an organization which will in time have tremendous influence on our people. I am referring to the Iowa Society for Mental Hygiene. This group was founded in Iowa in 1944 by a group of us that met every three months in Des Moines in the official capacity of the State Board of Eugenics. Dr. Walter L. Bierring was and is Chairman of that board and encouraged us to form a society. Gradually we turned the running of it to the lay members and they have carried the ball ever since. It continues to grow and is active in some communities, showing films, bringing in speakers and helping with legislation. We should mention at this point the tremendous help we received from the Women's Auxiliary of the American Legion in promoting and adopting mental hygiene programs. Just as the Tuberculosis Society and the Heart Association have brought needed help to those areas, there is no doubt that our Mental Hygiene Society will wield a bigger force than any of them in our state when its growth is accomplished.

In 1946 the Congress of the United States passed the Mental Health Act. This act appropriated money for research, training and community clinics in mental health. The reason for the act grew out of the experiences of the last war when it was brought home so discouragingly that the mental health of our people has not adequately been cared for under the existing state and private programs. Whether or not this new program will result in an improvement or not remains to be seen. One of the most important aspects of the program has been the building of a research center for mental disease at Bethesda, Md., and the supplying of large funds for research grants elsewhere. There has been far too little interest in research in mental disease. Compared to cancer, poliomyelitis and heart disorders, mental disease is far more common than all three put together. But the amount of research has been infinitely less.

Under the Mental Health Act, each state has been allotted funds according to a formula based on population and the need for establishing community clinics or mental health centers. In Iowa this has varied from approximately \$50,000 to

\$70,000 per year. In order to administer these funds and supervise the program, the preceding legislature passed a resolution making the Psychopathic Hospital the Mental Health Authority in Iowa. An advisory committee was appointed by Governor Beardsley. The director of the Psychopathic Hospital was designated as the Director of the Authority. The advisory committee at present consists of Dr. Bierring of the State Department of Health, Mr. Robert C. Lappen of the Board of Control, Dr. Graves, psychiatrist with the Board, Dr. Herbert C. Merillat of the Retreat, and myself. Through the interest and cooperation of Dr. Bierring, we were given some of his limited space for offices. A psychiatric social worker, who acts as executive secretary, is in charge. Clinics have been established in Davenport, Cedar Rapids, Burlington and Waterloo. Assistance has been given to the Child Guidance Clinic in Des Moines to enlarge its staff and expand its services. Aid has been given Professor Ralph H. Ojemann at the University of Iowa to carry out his project for Preventive Psychiatry in Public Schools. This project has received wide national attention. The clinics have been financed largely by the local communities through county and city funds, Community Chest donations and by the Mental Health Authority. In no case has it been possible to employ a full-time psychiatrist for a center. Only through the great interest and sacrifice of psychiatrists in private practice have we been able to have the necessary psychiatric supervision. These clinics have been doing a magnificent job, and again one of their most important accomplishments seems to be the education of people as to what can be done in treating and handling personality disorders. The clinics will need state and county support, if the Mental Health Authority is to be able to go on and start new clinics. The Legislature did pass a bill during the last session, permitting the counties to pay for the psychiatric treatment of indigent patient in the centers. Physicians are referring more and more patients to these clinics for advice and treatment.

Another development in Iowa is also encouraging. This has been the opening of psychiatric wards in our general hospitals. This is a further trend towards the elimination of differences of treatment and care for psychiatric disorders. This development has been possible only with the increase in the private practice of psychiatry in Iowa. Davenport, Clinton, Dubuque, Cedar Rapids, Iowa City, Des Moines, Council Bluffs, Burlington, Sioux City and Waterloo all have men who are in the private practice of this specialty. Here again, it seems to me, these men are not only seeing early cases and cases which can be treated, but are doing an even more important job—that of bringing the understanding and interest of personality disorders to the members of their county societies and the people of their communities.

At Iowa City, the Psychopathic Hospital con-

tinues an integral part of the College of Medicine and the University Hospitals. Our resident training program has increased from four to 12 men, and they can now elect to integrate this training with a postgraduate course in psychiatry, leading to a master's degree after three years' experience and the completion of a thesis. There has been a tremendous increase in the number of non-psychiatric cases seen by our staff in the General Hospital. Under a Public Health Grant, a collaborative program with the Department of Medicine has been arranged to bring a better understanding of emotional problems as playing an etiological role in certain somatic disorders. An internist with psychiatric training is employed full-time in the Department of Medicine. Residents from medicine rotate through the psychiatric service for three months and internes for three weeks.

A collaborative research program with urology and biochemistry on steroids is under way and progressing rapidly. Other research problems in electroencephalography, schizophrenia, psychopathic personality, new drugs and new types of treatment are in progress.

The number of teaching hours has been increased considerably and the medical student now looks upon psychiatry as one of his more important courses.

The staff of the hospital takes an active part in the affairs of the Medical School, serving on the admissions, research, curriculum and other committees.

There has also been a marked increase for consultations from physicians in the state and from the courts and legal profession. A member of our staff has also been serving half-time as a consultant in Student Health. Although our staff may seem large to our confreres in the State Hospitals, one can readily understand why we feel as though time were a precious commodity.

In conclusion, we may fairly say that within the period since the last war, there is every indication that the practice of psychiatry has made definite progress in Iowa. What is even more important has been the change in attitude and interest on the part of the state, the medical profession and the public to our field which is becoming recognized as one of the major public health problems of medicine. Let us hope that the present trend will continue and that these modest beginnings of a new era in the care of those afflicted by mental and emotional disorders will reach the high standards demanded in other fields of medical care.

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CLINICOPATHOLOGIC CONFERENCE

Iowa Methodist Hospital
Raymond Blank Memorial Hospital for Children
February 8, 1951

RICHARD F. BIRGE, M.D.

JACK SPEVAK, M.D.

ROBERT R. FIFE, M.D.

AND

OLIN A. ELLIOTT, M.D.

DES MOINES

SUMMARY OF CLINICAL RECORD

Dr. Olin A. Elliott (General Practice): A 17 year old white boy entered this hospital on November 11, 1947, complaining of increasing weakness of six weeks' duration and hemoptysis of one month's duration.

A few weeks previously, he was training for a cross-country track meet, when he noticed that his legs were weak. He became weak and tired. Soon, he had to give up running altogether. Moderate dyspnea was unaccompanied by thoracic or precordial pain, palpitation or ankle edema. For about a month he had spit up blood on frequent occasions, often a cupful or more a day. He had occasional headaches. Although his appetite was excellent, he had lost eight pounds in weight during the past month. He had noticed no blood in his stools. There was no history of genito-urinary symptomatology. Except for a fungus infection of his ear a year previously, he had always been well. The family history was negative for tuberculosis, cancer, diabetes and hypertension.

Physical examination: A slender, well developed white boy was seen lying comfortably in bed. He was well oriented and cooperative. He appeared very pale. The pulse was 80 per minute; his respiration 20 per minute. The temperature was 97.4° F. The blood pressure was 110 systolic, 60 diastolic.

The heart was not enlarged, and its rhythm was regular; no murmurs were heard. A few rales were heard in the left chest at the base. No abdominal masses were palpated. The reflexes were physiologic and equal. The extremities showed no edema and were symmetrical.

The admission hemogram was: Erythrocytes 2.70 million per cu. mm.; hemoglobin 6.8 Gm. per cent and leukocytes 6,800 per cu. mm. with eosinophils 4, band cells 6, segmented neutrophils 61, lymphocytes 27 and monocytes 2 per cent. The sedimentation rate was 113 mm. per hour (Westergren). Kline and Kahn flocculation tests gave negative results. The platelet count was 440,000; the bleeding time was two and one-half minutes. An arm band test was negative.

A blood smear was described as follows: "Normochromic anemia characterized by moderate anisocytosis and a tendency towards microcytosis. Mod-

erate polychromasia is observed. Blood platelets are present in large numbers. The leukocytes are not remarkable, except that slight eosinophilia is present."

Urinalysis showed a specific gravity of 1.012; albumin 0.1 Gm. per 100 cc.; leukocytes 2 to 3 and erythrocytes 30 to 40 per high power field in a centrifuged specimen. A concentration test showed: 6 a. m., 200 cc. with a specific gravity of 1.011; 7 a. m., 35 cc. with a specific gravity of 1.013; 8 a. m., 75 cc. with a specific gravity of 1.012.

The total protein was 6.5 Gm., albumin 5.4 Gm. and globulin 1.1 Gm. A cold agglutinin test was negative.

Repeated examinations of sputum yielded no acid-fast bacilli after concentration.

A radiograph of the chest was reported to show: "The heart appears normal in size and shape. There is a diffuse, finely patchy parenchymatous infiltration extending from the left hilus towards the first, second, third and fourth anterior interspaces. This has the appearance of pneumonia, but, from the history, it could represent aspiration of blood. The remainder of the lung fields is clear except for peribronchial infiltration in the lower and medial right lung."

An electrocardiogram showed a normal sinus rhythm with a rate of about 80. The interpretation was: "There are no findings in this tracing that would particularly suggest the presence of organic disease."

Course: The patient remained afebrile throughout his illness. He was given several blood transfusions, but hemoptysis persisted, and the erythrocyte count remained below three million per cu. mm.

On November 24 the boy's right elbow and left ankle were noted to be swollen, but were only slightly tender. The swelling subsided rapidly. Cardiac arrhythmia with premature beats was observed at this time. On November 27, swelling of the left ankle, knee and right elbow appeared. The joints were mildly painful but not red or feverish. The swelling seemed to change from joint to joint. At this time the boy had a mild sore throat. A premature beat, followed by a short compensatory pause, was heard every six beats. Albumin, erythrocytes and leukocytes persisted in the urine.

On December 1 the patient was seen in respiratory distress. He had a sallow, pale appearance, and was markedly dyspneic. He had a non-productive cough. The pulse was 124 per minute, but the skin was dry and warm. Later in the day he began to cough up blood. At this time the blood pressure was 108 systolic, 30 diastolic. He expired in the afternoon.

An autopsy was performed.

DIFFERENTIAL DIAGNOSIS

Dr. Jack Spevak (Pediatrics): This case history concerns itself with a white, 17 year old male ad-

mitted to this hospital because of hemoptysis. The duration of symptoms from onset to death covered a period of about two months. The hemoptysis was severe but was not associated with fever, chills or night sweats. There was no pain. Weakness and loss of weight were noted. Studies of the urine revealed hematuria, albuminuria, and a fixed specific gravity, indicative of renal insufficiency. A few days prior to death, he developed polyarthritis and cardiac arrhythmia.

I am expected to make a diagnosis, it seems, concerning an afebrile disorder, in a 17 year old boy, characterized by profuse hemoptysis plus the symptoms just enumerated, leading to death within a period of two months.

Bleeding from the lungs is an important and fairly common medical problem. One must ascertain that blood is coming from the pulmonary tree and not from the gastro-intestinal tract, or the nasopharynx. Blood which comes from the lungs is often bright red and frothy in appearance, whereas that from the stomach may be dark red, brown or black and may be mixed with particles of food. Vomiting of blood is usually preceded by a feeling of nausea and is commonly accompanied by retching, whereas hemorrhage from the lung may begin without antecedent symptoms and is usually accompanied either by coughing or by clearing of the throat. I am going to assume that this boy's bleeding was from the pulmonary tree.

Tuberculosis probably ranks number one as a cause of hemoptysis in young people. It is estimated that between one-fourth and one-third of all patients suffering from pulmonary tuberculosis show color in their sputum or have frank hemorrhage from the lung. Copious hemorrhages occur, as a rule, in patients with cavities of considerable size, and are due to rupture of unsupported vessels (Rasmussen aneurysms).

If we are to postulate tuberculosis, we must explain the joint, renal and cardiac involvement. Children with primary tuberculosis sometimes complain of pain in different parts of the body, often localized to the large joints. Now and again these pains may lead one to regard a tuberculous condition as an acute rheumatic polyarthritis.

Probably the strongest single point against the diagnosis of tuberculosis in this instance is the absence of fever throughout the illness. Sputum examinations were negative for acid-fast bacilli. A negative tuberculin test would have excluded the condition.

Hemoptysis may occur in cases of fresh, acute infiltrations where pneumonic capillary congestion develops. Another source is ulceration of lesions extending into or developing in the bronchial mucous membranes.

Among inflammatory diseases of the lung, bacterial and viral pneumonias may manifest hemoptysis. Fever is quite characteristic of these conditions. Mycotic infections, such as actinomycosis, blastomycosis, coccidioidomycosis, cryptococcosis

and sporotrichosis may involve the lungs, simulating tuberculosis quite closely and may be manifested by hemoptysis. Sputum studies may reveal such fungi, not reported to be present in the case we are discussing.

Primary neoplastic disease of the lung is rare in children. The most frequent form is sarcoma.¹ Rarely, carcinoma, bronchial adenoma and hemangioma are encountered. There is no classical clinical picture of primary malignancy of the lung. As a rule, the first symptom is cough. Occasionally, the first manifestation is that of pulmonary infection. With few exceptions there is an inflammatory reaction, but the fever is usually not high. Pain in the thorax is sometimes a prominent manifestation, especially when the malignancy has extended to the pleura.

Exceptionally, hemoptysis is a prominent manifestation of pulmonary neoplastic disease of children. On the other hand, it is not uncommon in bronchial carcinoma. One may see slightly streaked sputum or considerable bleeding.

Bronchial carcinoma is most common after the age of 40 with the greatest incidence around 60; it is much more common in men than in women. Bronchial adenoma is more commonly encountered in young people, although less frequent in males than in females. Often, the history is of long duration and usually relates to mild mucoid expectoration, with occasional massive hemoptysis. For some reason, there is, as a rule, little or no suppuration beyond the obstruction.

Bronchoscopy is of great value in making a diagnosis of growth in the pulmonary tree. There may have been a good reason why this procedure was not carried out here.

It is difficult to explain the renal, cardiac and joint findings if we offer, as a diagnosis, primary growth of the lung or bronchus. Metastasis from the lung to these organs is not the rule.

Metastatic tumors of the lung arise principally from malignant lesions of the testes, prostate, uterus, thyroid, breast, adrenal, kidney and gastro-intestinal tract. They appear usually as rounded multiple masses of varying sizes scattered throughout both lungs. Such a picture is not present in this boy's radiograph, and we are not given a clue in his record to suggest neoplastic disease outside of the thorax.

Cardiovascular-renal diseases comprise the last major group that I wish to consider. Here, we are more likely to find our etiologic diagnosis. We must consider myocardial failure, aneurysm, congenital heart disease with superimposed bacterial endocarditis, and the collagen diseases which include rheumatic fever, nephritis, periarteritis nodosa and disseminated lupus erythematosus.

The cardio-circulatory phenomena associated with congestive failure, such as dyspnea, cyanosis, tachycardia, edema, hepatic engorgement and tenderness are not present here, nor do the radiographic and electrocardiographic findings suggest

such a diagnosis. Heart failure was probably a terminal event. Not present in the case under study are the murmurs of valvular disease. Not present are the irregular temperature with or without chills, petechiae, enlargement of the spleen, leukocytosis, positive blood culture—findings upon which the diagnosis of bacterial endocarditis commonly rests.

A week before this patient's demise he began to have swelling, pain and tenderness involving ankles, knees and elbows. The joints were not red or feverish, but the swelling did change from joint to joint. There was also cardiac arrhythmia (premature beats). One is justified in considering a diagnosis of rheumatic fever on the basis of these findings, but how can one explain the antecedent symptoms of hemoptysis and weight loss, and the urinary findings of hematuria and albuminuria?

It is true that some authors place mitral stenosis second only to tuberculosis as a cause of hemoptysis in young people. Such hemorrhage may be quite profuse. Nevertheless, the history, physical, radiographic and electrocardiographic findings are not in keeping with a diagnosis of mitral stenosis.

A relatively rare systemic disease is periarteritis nodosa. The disorder has a diversified symptomatology and may resemble an almost unlimited variety of diseases. Any tissue or organ may be involved. The symptoms are so confusing that the diagnosis frequently is not made during life. The salient features are: abdominal pain, pain in the extremities, edema, hemorrhagic nephritis, fever, leukocytosis, peripheral neuritis and various skin eruptions. Heart failure may occur. Pulmonary symptoms have been described. Eosinophilia is frequently found.

According to Spiegel,² a fatality due to pulmonary hemorrhage has been observed in periarteritis nodosa. She claimed that the pulmonary arteries are not exempt from involvement. Five of her 17 patients showed pulmonary lesions dependent on the typical vascular changes of periarteritis nodosa.

Renal damage is observed in most cases of periarteritis nodosa. Gross hematuria may occur. Symptoms and signs of impaired renal function are observed. Not infrequently, uremia ensues. When renal damage is marked, hypertension is usually present.

Painful joints, as were present in our case, may occur. Joint pain may be severe enough to simulate acute rheumatic fever.

Cardiac manifestations are surprisingly few, in face of the 70 per cent incidence of involvement of the heart encountered at necropsy. When rheumatic fever and periarteritis nodosa co-exist, however, the heart plays a prominent role, and the signs of pancarditis are often present.

This boy's hemoptysis, joint symptoms, urinary findings, elevated sedimentation rate, weight loss and death in a short period fit the diagnosis of periarteritis nodosa. On the other hand, the ab-

sence of fever, hypertension, tachycardia, leukocytosis, eosinophilia, abdominal pain and peripheral neuritis tend to nullify such a diagnosis.

I am not going to say much about disseminated lupus erythematosus except that it is usually rather chronic in nature, and is more common in females than in males. Any part of the body—lungs, heart, joints, liver, spleen, kidneys, gastrointestinal tract or skin—may be involved. There is characteristic involvement of the skin of the face usually, but not always, present. One sees the so-called butterfly lesion involving the bridge of the nose and malar areas of the face. Laboratory findings are leukopenia, elevated sedimentation rate, L. E. cells in the bone marrow, reversal of the albumin-globulin ratio, albuminuria, hematuria and urinary casts.

Hemoptysis, as the major symptom, is rather unusual for acute glomerulonephritis, nor was there any hypertension. Blood urea nitrogen studies were not carried out. We are not given any information about fundoscopy. On the other hand, the urinary findings of hematuria, albuminuria and fixed specific gravity indicate the presence of renal insufficiency. The short duration of this boy's illness, coupled with a normal past medical history, leads us to assume the presence of acute nephritis.

Nephritis, however, I believe to be only a part of a systemic disease picture. I suspect that we are dealing with one of the more diffuse collagen diseases, probably periarteritis nodosa.

Dr. Richard F. Birge (Pathology): A clinicopathologic conference is a challenge to all of us, not merely an exercise for the discussant. Therefore, I have asked a number of you to forward your diagnosis to me. The majority agree with Dr. Spevak that the case is probably one of periarteritis nodosa. Others have suggested rheumatic fever, lupus erythematosus and pulmonary neoplasm. Among you, few have suggested the correct diagnosis of chronic glomerulonephritis.

DIAGNOSES

Clinical Diagnosis: Periarteritis nodosa.

Dr. Spevak's Diagnosis: Periarteritis nodosa.

Necropsy Diagnosis: Chronic glomerulonephritis complicated by massive pulmonary hemorrhage.

PATHOLOGIC FINDINGS

Dr. Birge: As Dr. Spevak predicted, serious renal damage was encountered. The kidneys weighed 245 Gm. (normal weight 300 Gm.). The capsules stripped with moderate difficulty revealing slightly granular pale brownish-tan surfaces studded with numerous minute, evenly distributed, bright red punctate areas. The renal cortices showed patchy linear hyperemia. The remainder of the urinary system showed no pathologic changes.

The deeply hemorrhagic lungs were large, the right weighing 1,470 Gm. and the left weighing 1,350 Gm. The lungs were exceedingly boggy,

showing generalized deep red discoloration. Pale crepitant areas were found only anteriorly. The cut surfaces of the lungs exuded much bloody fluid.

A primary site for pulmonary hemorrhage could not be demonstrated.

The general examination, which included the brain, revealed no appreciable edema of the tissues. The heart was not enlarged. Evidence of passive congestion of the abdominal viscera was noted.

Microscopy. Almost every glomerulus showed severe damage. Many glomeruli showed total hyaline fibrosis; others showed epithelial crescents or proliferative obliteration of capillaries. A few capillary loops showed fibrinoid changes or were infiltrated by neutrophilic leukocytes. There was concomitant tubular atrophy with a relative increase in the stroma. The renal tubules sometimes contained hyaline casts, pigment casts and erythrocytes. The stroma showed moderate infiltration by lymphocytes and plasma cells.

Most of the pulmonary alveoli were packed with blood. There was an accompanying, apparently secondary, moderate, patchy acute inflammatory reaction found to involve much of the lung parenchyma. The process was characterized by the presence of moderate numbers of neutrophilic leukocytes in the air sacs. The blood present in the alveoli was, in places, fresh. In other places one observed erythrocyte and blood pigment phagocytosis. Through many sections of organs and tissues, evidence of polyarteritis could not be demonstrated.

CLINICOPATHOLOGIC CORRELATION

Dr. Birge: In summary, this was an example of latent chronic glomerulonephritis, unrecognized until an unusual complication appeared. Nothing in the patient's history suggested the probable date of onset. Presumably, the boy had had serious renal damage for many months, probably years, judging by the microscopic appearance of the kidneys. It is remarkable how patients with severe, chronic renal damage can adapt themselves to even rigorous environmental demands, such as participation in track in this case, for long periods of time until a critical level of renal insufficiency is reached.

The complicating pulmonary hemorrhage mystified all of us. Although minor hemorrhagic phenomena occur oftentimes in uremia, massive pulmonary hemorrhage is, in my experience, a rare complication of nephritis. Is it possible that the pulmonary hemorrhage was a manifestation of right heart failure with pulmonary passive congestion, precipitated by the exertion of athletic participation? Dr. Margulies suggested the possibility of glomerulonephritis after perusing the history of this case. I hope he can explain the pulmonary hemorrhage.

Dr. Harold Margulies (Internal Medicine): The case presented today seems especially worthwhile,

not only as a challenging exercise in diagnosis but as an unusual clinical pattern.

It interests me particularly because it affirms a principle to be followed in diagnosis. Unfortunately, it is not unusual to be given such limited data as were available here. Without such helpful information as blood urea determination and eye ground studies, the diagnosis of this case is rendered difficult. It is necessary to make the most of what is offered, and to resist the temptation to speculate about missing information.

In the present instance, the specific gravity was fixed—almost incontrovertible evidence of well established kidney damage. Working from this point of relative certainty, the question becomes one of deciding whether glomerulonephritis can cause the whole pattern.

Textbook discussions do not frequently include hemorrhage as a part of the nephritis complex. Nevertheless, this case is not unique in that respect. My personal experience includes two patients who had gross hemorrhage as the most striking finding in the presence of chronic glomerulonephritis.

One man received, during the final months of his life, several blood transfusions a week for thrombocytopenic purpura. His blood urea was consistently elevated. Autopsy showed strikingly contracted kidneys and microscopic evidence of profound damage to renal elements. The other patient was known to have chronic glomerulonephritis for many years. Gastro-intestinal hemorrhage appeared and recurred. At autopsy numerous petechiae of the gastric and intestinal mucosa were encountered.

We have, then, further evidence of the widespread disturbance of physiologic processes which can occur with nephritis. For example, severe anemia, responding to no specific therapy, is characteristic of this disease. Minor degrees of hemorrhage with uremia are also familiar. Now we can all add to our knowledge the occurrence of massive hemorrhage as a part of glomerulonephritis.

Dr. Birge: Recently, a 12 year old girl entered Blank Hospital with recurrence of severe epistaxis. Rather severe anemia was present. Only one urine specimen was obtained. The quantity was too small to permit determination of the specific gravity. Albumin and many erythrocytes were present. A consultant was able to stop the bleeding, but the child developed signs of pulmonary edema and expired not long after admission. At necropsy, massive suffusion of the lungs with blood was observed. Grossly and microscopically, the kidneys fitted our concept of subacute glomerulonephritis.

Dr. Robert R. Fife (Resident in Pediatrics): There is little literature available on the subject of massive hemorrhage complicating glomerulonephritis. I was unable to find any recorded case occurring in children. Reports have been presented, however, of patients with epistaxis, pur-

pura, bleeding into the skin, gastro-intestinal hemorrhage and massive bleeding from the kidney itself. Most patients were older and had associated pathology or other factors present in their stories to make the diagnosis of hemorrhage due to glomerulonephritis at least open to question.

Pedigo and Nolan³ describe the following case: A 52 year old white male developed headache, puffy eyes and hands, and lethargy. The urine became scanty and was reddish-brown in color. Two days later he lost consciousness and fell to the floor. He regained consciousness, but developed a stiff neck, headache and emesis. On admission to the hospital he was found to be semi-comatose with blood pressure of 190 systolic and 112 diastolic. He had pitting edema of the lower extremities. The Kernig and Brudzinski signs were positive. The urine showed albuminuria; red cells and casts were present. The spinal fluid was bloody. At autopsy acute glomerulonephritis and massive subarachnoid hemorrhage were found, but a careful search revealed no ruptured aneurysm or other bleeding point.

Case 34342 of the Massachusetts General Hospital⁴ was a 46 year old white man who entered the hospital with chief complaint of hematuria. Five weeks previously he had developed anorexia, nausea and vomiting, and red spots had appeared in the skin. A physician found red cells and albumin in the urine. Three years previously a thoracoplasty for tuberculosis had been performed. One year later, the process was considered to be quiescent.

On admission, the breath tones were slightly diminished on the right; no rales were heard. Blood pressure was 120 systolic, 75 diastolic. The urine showed albumin and numerous red cells; the specific gravity was 1.008. In the hospital he developed hemoptysis which increased in severity until considerable respiratory difficulty was produced and clots were raised. Ronchi and moist rales were heard in both sides of the chest. He died on his ninth hospital day. At autopsy it was found that he had subacute glomerulonephritis and pulmonary edema with pulmonary hemorrhage.

The first case was complicated by a fall at the onset of his symptoms of subarachnoid hemorrhage. Significant hypertension was present.

The second case had no hypertension. He gave a history of thoracoplasty for tuberculosis. However, at the time of autopsy the tuberculous process seemed almost healed.

Bleeding in nephritis is thought by most writers to be due to degenerative changes in the capillaries with increased capillary permeability. The bleeding tendency may be aggravated by hypertension.

Dr. Birge: We must also recall that the effect of chronic renal insufficiency on the bone marrow is profound. The characteristic normochromic anemia is often accompanied by marrow hypo-

plasia. It is conceivable that thrombocyte production may, at least in some instances, be impaired or retarded, leading to hemorrhage.

Dr. Tracy Mallory, in discussing the second case cited by Dr. Fife, described pulmonary changes strikingly similar to those we encountered. He stated: "Microscopical examination showed massive hemorrhage into the alveoli and rather minimal inflammatory reaction. There was some fibrin, some foci of hyaline membrane lining the alveoli and a beginning exudation of polymorphonuclear leukocytes. The inflammatory reaction looked more as if it were a reaction to hemorrhage than if it were primary. I am inclined to interpret this as a form of extremely severe pulmonary edema or pneumonitis, which we do see from time to time in cases of active nephritis. I have seen it most often in cases of sulfonamide injury to the kidney, but I am quite sure that I have seen it in glomerulonephritis on a number of occasions as well."

One must, therefore, postulate an insult to capillaries. However, I wonder whether or not such vascular damage is related pathogenetically to the original renal vasculitis. Although vasculitis of the type seen in the renal glomerular loops may conceivably occur elsewhere, as Dr. Fife suggests, it would seem that this factor would operate consistently, early in nephritis when vascular damage is acute and not as an uncommon late manifestation. Uremia was not present in some of the cases we have cited. However, is it not conceivable that retained metabolites may damage capillaries, as in the lungs or intestinal tract, even though azotemia is not demonstrable?

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INTERNATIONAL COLLEGE OF SURGEONS MEETING

The International College of Surgeons will hold its sixteenth annual assembly September 10 through 13 at the Palmer House in Chicago, Ill. The Honorable Estes Kefauver, United States Senator from Tennessee, will speak on "The America of Tomorrow" and Dr. A. Lawrence Abel, London, England, will speak on "What Is Happening in Britain—Fact and Fiction" at the convocation.

Iowa physicians taking part in the program include: Dr. Frank R. Peterson, Cedar Rapids, who will speak on "Morbidity Due to Incomplete Cholecystectomy"; Dr. Otis R. Wolfe, Marshalltown, who will speak on "Surgery of Dislocated Lenses in Children" and Dr. Rubin H. Flocks, Iowa City, who will speak on "Carcinoma of the Prostate."

The JOURNAL of the
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Vocational Rehabilitation

In these days of mounting taxation, it is most heartening to find examples of the expeditious use of tax funds. This is particularly true with regard to the Iowa Vocational Rehabilitation Division. This Department works with the victims of illness or accident who have lost their earning power. In Iowa, 3,000 to 4,000 persons are permanently disabled each year. During the past year 918 individuals have been rehabilitated. Those 918 persons were earning less than half a million dollars a year, all together, before they went to the Vocational Rehabilitation Department. Now that their cases are closed, they are earning nearly two million dollars a year. That means Iowa has a net gain of \$1,500,000, as a return on the \$95,000 the state spent on this department last year.

The rehabilitation program is accomplished in three ways. First, it has to find out how much of the physical handicap can be removed by surgery, or medical treatment or artificial limbs. Second, it has to find out what kind of work the "disabled" person can do, in which he will not be working under a handicap. Then it has to find him a job he will be able to handle, and handle well—one where he will have a natural advantage, if possible, instead of a disadvantage.

If surgery or medical treatment will improve the individual's ability to work, the Rehabilitation Division attempts to make necessary arrangements. If the disabled person has no funds of his own, the University Hospital is requested to treat him as a state patient. Often the patient is able to pay part of the expense. The Department has funds to help when he cannot. It is important that a person who has been disabled by an acci-

dent, or by illness, or perhaps ever since he was born, be given the best fighting chance possible.

The essential parts of rehabilitation—medical and vocational diagnosis, training for the right job, and placement—are free regardless of financial status. The only things the patient is asked to help pay for, if he can, are medical and surgical fees, artificial limbs and appliances such as hearing aids, personal maintenance and occupational tools and equipment.

Iowa has had a Vocational Rehabilitation office since just after the first World War. It is supervised by the Board for Vocational Education, which also directs vocational work in the high schools and adult education.

As a result of the work done by our Vocational Rehabilitation Division in a single year, nearly 1,000 Iowans are now carrying their own burdens, instead of being a burden on someone else. Instead of being idle and dependent, they have become self-respecting, productive members of our society. These are things no amount of relief money can buy.

Poliomyelitis in 1951

Up to the present time review of the incidence and distribution of acute anterior poliomyelitis is most optimistic. To date there are no real indications of another epidemic year in the making. Our 125 reported cases (through July 14) are scattered statewide in 27 counties with no more than four cases in any one county. The four Page County cases were all reported prior to June 1.

While the month of June usually does not show a large number of poliomyelitis cases even in a year which subsequently shows a large total, it usually is a month in which the trend for the remainder of the year begins to become apparent. In 1950 the curve continued to swing upward from the March low of five cases with a definite upward acceleration in June. This year by contrast the curve for the entire period remains flat.

Sudden Cardiac Arrest

Cardiac arrest in the operating room is a catastrophe which may well overwhelm the surgeon-anesthetist team by its very magnitude. Only a carefully considered plan of action, executed with resolute urgency, can save the patient's life. Procrastination, hasty but ill-advised activity, or fearful pessimism all mean death.

The striking failure of blood pressure and pulse usually makes the diagnosis obvious to the anesthetist. Excluding the Stokes-Adams syndrome, this sudden and complete circulatory failure is of two types: (1) Absolute arrest and (2) Ventricular fibrillation. It is impossible to differentiate these two conditions except by direct observation or palpation of the heart. Thus, to accurately diagnose and properly treat cardiac

arrest, direct access to the heart must be obtained—either transthoracically or transperitoneally. Speed is of paramount importance since an adequate circulation must be re-established within three or four minutes if death or permanent cerebral damage is to be avoided.

It is suggested that each surgeon and each anesthetist acquaint himself with a definite plan of procedure, thus avoiding hesitation and delay when confronted with the actual circumstance. A practical plan is outlined below.

(1) The *anesthetist* maintains satisfactory respiration, using rhythmic compression of a re-breathing bag to provide 100 per cent oxygen to the patient.

(2) The *surgeon* must gain immediate access to the heart and maintain the circulation by proper cardiac massage. Rapid rib resection and direct massage is the most effective. However, if an intra-abdominal procedure is in progress, the surgeon may occasionally maintain effective massage through the diaphragm, compressing the heart against the anterior thoracic cage. The rate of massage should be maintained at 80 beats per minute, simulating gradual systole and abrupt diastole.

(3) *Electric shock*, applied in cases of ventricular fibrillation, may aid in restoring a normal rhythm. A 60 cycle alternating current of 1-1.5 amperes is passed through the heart for less than one second. Such a simple emergency setup should be available in each operating suite.

(4) *Drugs* play a minor but useful role in cardiac resuscitation. Three to five cc. of a two per cent solution of procaine, injected intraventricularly, may be useful in combating ventricular fibrillation or in preventing such fibrillation which may be complication of cardiac massage. Epinephrine is useful only in strengthening the cardiac contraction once a spontaneous rhythm has been resumed. Because epinephrine has, in itself, a tendency to induce fibrillation, it should be used in conjunction with procaine and in dosage not to exceed 0.5 cc. of 1:1000 solution.

This or a similar plan of therapy, directed toward the treatment of cardiac arrest, should constitute a portion of every surgeon's storehouse of knowledge. It is well to remember that a confident, well executed plan can save a life, while panicky improvisation is foredoomed to failure.

Have You Contributed to the Medical Education Fund?

Early in June the President of our State Society, Dr. Donald C. Conzett, sent a letter to every member calling his attention to the importance of giving financial support to the American Medical Education Foundation. The money so collected is to be given without restrictions to medical schools throughout the country. Physicians may designate the school which they wish to

benefit from their contribution. Contributions are deductible items on income tax.

It was hoped that every physician in the country would contribute \$100 a year to this fund. Everyone realizes that medical education has been subsidized for many years and that all graduates of medical schools have benefited from the contributions of someone beside himself, since his tuition would not begin to cover the actual cost of the training.

The August 4 issue of the *Journal of the American Medical Association* carries a list of those who have contributed as of July 5, 1951. Seventy names are listed for Iowa, which is less than three per cent of our membership. It will be noted that the list for Iowa compares favorably with many other states, but it is our hope that many more physicians will add their names to this list by the time it is next published. The cause is one which merits our support.

Do You Want an Assistant?

For the past seven years, the central office has endeavored to maintain a placement bureau to bring together physicians who are looking for a location and communities that are wishing a doctor. Recently, to supplement this service, the office has suggested that physicians looking for a special type of practice place an ad in our classified section. We realize that not all physicians advise us when they wish an assistant, and we have felt that advertisements might locate openings about which we have no knowledge.

This section of the *Journal* has expanded greatly in the last year. We feel it has an important part to play in the location of physicians and believe it is giving a real service not only to the doctors looking for a place to practice but also to those looking for an associate. We recommend that you read it each month to see if it may have something of value to you.

STATUS OF TAX EXEMPT RETIREMENT PLAN BILLS

Physicians have been interested in several bills which would permit professional people to set aside a certain amount of income each year, tax exempt, for retirement purposes. This would give professional people the same advantage as most industrial workers now possess from pension plans set up by industry.

No action has been taken on the House bills but Senator Ives brought the matter up for consideration when he offered it as a Senate floor amendment to the tax bill already passed by the House. The State Society has contacted Senators Hickenlooper and Gillette to ask favorable consideration of this Ives amendment. Individual doctors can, if they wish, add their request for support. It is the Ives amendment to H. R. 4473.

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. HOWARD W. SMITH, Woodward

President-Elect—MRS. J. DONALD HENNESSY, 205 Frank St., Council Bluffs

Secretary—MRS. CHARLES F. LOWRY, 246 Lincoln, Council Bluffs

Treasurer—MRS. DWIGHT C. WIRTZ, 449-56th St., Des Moines

PRESIDENT'S MESSAGE

With this message, I send you my warm personal greetings. I hope that each one of you had a pleasant summer; some time for play and some time for rest.

Mrs. Harold Wahlquist, our National President, informs me that our membership may expect shortly, a letter under the signature of Drs. Henderson, Cline and Lull, relating to our continued activity in the educational campaign.

Our State Program Committee has been working (under the guidance of our Medical Advisory Committee) preparing program materials and suggestions for your use for the coming year. Our Medical Advisory Committee emphasizes this year, organization, health education and student nurse recruitment. All projects undertaken in public relations and in the legislature field should first be program material at your regular meetings, so you will have a unified front in your public program. You will soon be hearing from your Program Committee.

The Year Book Committee, in co-operation with the other State Committees, has been working diligently on a Year Book that should be of great value to all Auxiliary members.

Doctors' wives all over the country have accepted the challenge and responsibility to help the people in their own local communities to use the health facilities that are already available in their own community, namely; the family physician, family dentist, Tuberculosis and Health Associations, local Cancer Society, local Red Cross; Crippled Children's Program, etc. We are teaching people to make use of what we have, instead of asking the Federal Government for aid. It is our method of preserving freedom and saving human lives.

Mrs. Howard W. Smith, President

HEALTH EDUCATION WORKSHOP

A health education workshop for community, county, district and state health chairmen was held at the Methodist Camp at Clear Lake June 10 to 12. This meeting was arranged and sponsored by the Division of Public Health Education of the Iowa State Department of Health, Leonard C. Murray, Director. Over 100 persons, mostly

women, registered at this meeting. The Woman's Auxiliary was represented by Mrs. Leslie W. Swanson of Mason City, a member-at-large. Other organizations represented were for the most part the voluntary health organizations with the bulk of the membership health council chairmen and health chairmen from Farm Bureau units.

Many speakers, experts in their field, were provided for the program. Topics discussed included maternal and child health, sanitation, cancer, communicable and preventable diseases, school health and first aid. Panel discussions, workshops and questions and answer periods provided inspiration and impetus to health programs throughout the state.

Mrs. Leslie W. Swanson

A MESSAGE FROM THE NATIONAL PRESIDENT

1. Know the background of the AMA and its program.
2. Increase the distribution of *Today's Health*.
3. Maintain our positive approach in the medical program of voluntary health insurance.
4. Cooperate in all health programs, school and rural, and in all health councils.
5. Learn the objectives of the World Medical Association and the Student American Medical Association.
6. Make the medical education fund our individual responsibility.
7. Cooperate with the Civilian Defense Program.
8. Keep informed as Auxiliary members in order that authentic information may be channeled into the many organizations to which we belong.

Mrs. Harold F. Wahlquist

PUBLIC RELATIONS POINTERS

Protect us from foreign enemies who would substitute paganism for Christianity.

Protect us from the domination of those who would cause us to lose our incentive to produce.

Protect us from men in public office who seek to provide us questionable good with our own money. Savings will be scrap paper in 12 years if inflation continues at its current rate. Inflation cannot be controlled by law. Lincoln

said: "Without public support nothing can succeed; with it, nothing can fail."

Public officers are mirrors in which we see ourselves. They are effects, not causes.

Do continue public relations promotion. Seek out the individuals in your membership of 57,000.

It is not the organization which thinks; it is the individual member. Program promotion should be a personal thing.

You are responsible. You can get results; with the public and with your husband. Your husband is tired when he comes home and is ready to relax and do nothing but grease the wheel that squeaks the loudest. It is your job to squeak. Your personal influence is largest.

GIVE IT ALL YOU'VE GOT!

Mrs. Claire H. Mitchell's notes on Mr. Edward Lipscombs' address at the National Meeting in Atlantic City

FUTURE NURSES CLUB OF WEST HIGH SCHOOL IN WATERLOO

The Black Hawk County Medical Auxiliary has interested West high school in starting a Future Nurses Club. After discussing its purpose and value, the club was organized in February. There are 30 active members, with many others interested, but because the second semester had already begun when the club was organized there were some classes and activities that interfered with the time given for meetings.

The physical education teacher was named faculty sponsor and the school nurse was appointed as nurse advisor.

Any junior or senior interested in exploring the fields of nursing is eligible to become a member of the Future Nurses Club. The purpose being to help its members to know early enough if they are suited for the nursing profession.

The Club meets during school time the first and third Tuesdays of each school month. Dues for members are \$.25 per year. The Club elected its own officers: president, vice-president, secretary and treasurer. The members decided to get the Future Nurses pin at a cost of \$.95 each.

A definite program was planned for each meeting with speakers representing different fields of nursing such as a director of the local nursing school, talks by an industrial nurse and a general duty nurse, a film on nursing and a tour of the State Mental Hospital at Independence. Transportation was provided by the members of the Black Hawk Medical Auxiliary. On May 12 the members of the Club were entertained at a tea given by one of the local hospitals.

Mrs. Carl A. Hanson, Chairman Nurse Recruitment and Loan Fund

COUNTY AUXILIARY ACTIVITY

The *Delaware County* Medical Auxiliary was the only Auxiliary in the state to rate a prize in the *Today's Health* contest. For obtaining the largest number of subscription credits, the Auxiliary received a group of phonograph records, "Health Heroes." These will be distributed for classroom use in schools of the community. This Auxiliary has also contributed to the Nurses' Loan Fund.

STATE AUXILIARY BUDGET 1951-1952

Administration

Stationery	\$200.00
Telephone	75.00
President's expenses	250.00
President-Elect's expenses	150.00
Total	\$ 675.00

Organization

Printing, stationery, telephone	
Total	\$ 300.00

Program

Special projects and committees ..	\$100.00
Councilors' activities	250.00
Delegates to A.M.A.	70.00
Yearbook	150.00
Expenses of Annual Meeting	150.00
Total	\$ 720.00
National dues	\$ 750.00
Miscellaneous	\$ 55.00
Total	\$2500.00

Funds to be derived from

State dues	\$2250.00
Iowa State Medical Society	\$ 250.00
	\$2500.00

INDIANA NURSE SURVEY FINDINGS

1. Talks by enthusiastic student nurses to civic organizations and school groups are far more effective than talks by older persons who have lost touch with teen-age thinking.

2. Teachers, ministers, priests and all counselors of young need more and accurate up-to-date information in order to advise about nursing as a career.

3. Best promotional methods are:

a. Open house and inspection tours of hospitals and nurses' residences.

b. Individual influences.

c. Career talks by convincing well-informed speakers.

d. Books. Seventh and eighth graders are especially influenced by the Sue Barton series.

STATE DEPARTMENT OF HEALTH

Valter L. Biering

MALARIAL INFECTION IN ARMED FORCES PERSONNEL FROM KOREA

The following is a summary of a report from the U. S. Public Health Service received August 3, 1951:

Significant numbers of Armed Forces personnel from Korea are experiencing attacks of vivax malaria after their return to this country and while they are not under military supervision, i.e., while they are on leave or after separation. These individuals will undoubtedly be found in each state. Presumably these infections were acquired last fall although in some instances it is probable that symptoms were not manifested until this spring due to prolonged incubation or the effects of suppressive medication.

Therefore, physicians should be warned to suspect malaria among patients presenting suggestive signs and symptoms, and who have been in Korea during the last year. Definitive diagnosis should be based on the demonstration of malaria parasites in the blood. The chances of discovering parasites are much better in thick blood films than in thin ones. Where blood findings are positive, controversial or uncertain, the slides should be sent to the National Depository for Malaria Slides, Parasitology Laboratories, Communicable Disease Center, P.O. Box 185, Chamblee, Georgia, for further examination by non-governmental consultants.

Treatment with modern antimalarials now available (chloroquine, pentaquine, chlorguanide, etc.) will alleviate symptoms promptly. Certain of the cases receiving complete courses of these drugs will remain free from malaria, but it is probable that others will relapse after weeks or months. Patients should be told of this possibility and advised to seek medical treatment again if symptoms recur. The likelihood of clinical reactivation decreases with the passage of time; relapses are rare after the second or third attack.

All cases should be reported to the state or local health department.

POLIOMYELITIS

A review of the numbers of poliomyelitis cases reported in Iowa from January 1 through August 4 of this year permits us to retain our hopes for a relatively low incidence for the year. While some definite increase was noted since early July,

the percentage of increase has not been great enough to indicate approaching epidemic prevalence in large areas of the state.

The following chart shows the 43 counties reporting cases in 1951:

County	Cases January 1 Through June 30	Cases July 1 Through August 4	Totals
Appanoose	—	1	1
Black Hawk	1	2	3
Bremer	1	—	1
Buena Vista	—	2	2
Butler	—	1	1
Calhoun	1	3	4
Cedar	2	—	2
Clayton	1	—	1
Decatur	1	—	1
Delaware	—	1	1
Des Moines	1	—	1
Dubuque	—	1	1
Emmet	2	—	2
Fayette	—	1	1
Floyd	1	—	1
Franklin	—	1	1
Grundy	2	—	2
Hamilton	2	—	2
Hardin	1	1	2
Harrison	—	2	2
Johnson	2	5	7
Jones	1	2	3
Keokuk	1	—	1
Kossuth	1	—	1
Linn	3	5	8
Mills	—	2	2
Mitchell	1	—	1
Monona	—	4	4
Muscatine	—	2	2
Page	4	1	5
Plymouth	1	—	1
Polk	3	4	7
Pottawattamie	1	—	1
Poweshiek	—	1	1
Scott	1	2	3
Story	2	3	5
Tama	1	1	2
Union	—	1	1
Wapello	—	4	4
Warren	2	1	3
Washington	—	1	1
Webster	—	1	1
Woodbury	1	—	1
Total cases through Aug. 4, 1951.....	41	56	97

The seasonal incidence by months through June and weekly following July 1 are as follows for 1950 and 1951:

Cases by Months for 1951	Cases by Months for 1950
January	January
February	February
March	March
April	April
May	May
June	June
Total	Total

Cases by weeks for July and first week of August, 1951	Cases by weeks for July and first week of August, 1950
1st week 0	1st week 3
2nd week 12	2nd week 12
3rd week 17	3rd week 31
4th week 13	4th week 46
1st week August 14	5th week 86
	1st week August 52
Total 56	Total 230
(Cases 1st 6 mos. 1951) 41	(1st 6 mos. 1950) 79
Tot. cases Aug 4, 1951 97	Tot. cases Aug. 5, 1950.. 309

VACCINATION OF DOGS AGAINST RABIES

Rabies is reported in dogs as well as several other species of domestic and wild animals in Iowa each year. The dog normally lives in close association with man and is capable of inflicting severe bite wounds. Because of these two factors, most of the exposures of man to rabies are caused by the rabid dog. Elimination of rabies among dogs thus would greatly reduce the number of persons who take the anti-rabies preventive (Pasteur) treatment each year.

Anti-rabies vaccination of dogs does give protection against the disease. Vaccination has been proven effective in laboratory experiments as well as in actual field conditions. The U. S. Army requires anti-rabies vaccination of all pets kept at an Army post or camp. Without exception the results from this action have been good. Some army camps have been located in areas in which rabies was present. In these instances rabies did not develop in the vaccinated dogs belonging to army personnel, even though they mingled with other unvaccinated dogs adjacent to the camp among which there were cases of rabies. In the Des Moines rabies epizootic no cases have been reported in dogs that have had an annual anti-rabies vaccination.

Anti-rabies vaccine is safe. All vaccine for animal use must pass rigid safety and potency tests of the Bureau of Animal Industry of the U. S. Department of Agriculture. It causes practically no discomfort to the dog.

The vaccination consists of injecting a small amount of grayish-tan colored vaccine under the skin of the dog. The vaccine causes the dog's body to build resistance against the disease, but it takes a little time. The full degree of protection is not reached until about 30 days after the date of vaccination. Thus, the dog should not be allowed to contact rabid animals during the 30-day period. A question which sometimes is asked is this: "Can a vaccinated dog get rabies?" The answer is "Yes," if the dog were exposed (bitten by a rabid animal) before the vaccination, or if it were exposed before the protection was fully developed.

Anti-rabies vaccination needs to be repeated once a year. Vaccination of young puppies is not always effective. Therefore, if puppies under 6 months of age are vaccinated, they should be re-vaccinated when they are 6 months old. Both farm dogs and city dogs should be vaccinated.

Farm dogs sometimes come in contact with rabid wild animals as well as rabid dogs.

Every dog owner is urged to take his dog to the veterinarian every year for an anti-rabies vaccination. At the time of vaccination the veterinarian usually furnishes a vaccination certificate and a small metal tag for the dog. Protect your pet, your family and yourself. Vaccinate your dog.

RABIES IN ANIMALS IN IOWA

Semi-Annual Summary of Reported Cases
January Through July, 1951

County	Cases
Black Hawk	cattle, 2; skunks, 3
Boone	cattle, 2; dogs, 5; skunks, 2; swine, 1
Bremer	skunks, 1
Buchanan	skunks, 5
Butler	cats, 1
Calhoun	cattle, 1; dogs, 3; skunks, 5
Carroll	cattle, 2; skunks, 1; dogs, 2
Cedar	cattle, 1
Cerro Gordo	cattle, 1; skunks, 1
Clayton	skunks, 2; foxes, 1
Clinton	cattle, 3; dogs, 1
Crawford	cattle, 2
Dallas	cattle, 2; skunks, 1; dogs, 10; swine, 1; sheep, 2
Davis	cattle, 3; skunks, 1
Decatur	skunks, 1
Des Moines	skunks, 2
Dickinson	skunks, 3; cattle, 1
Dubuque	skunks, 1; foxes, 1
Fayette	skunks, 2; cats, 1
Franklin	skunks, 1; cattle, 1
Greene	cattle, 4; skunks, 1; dogs, 4; swine, 1
Hamilton	dogs, 5
Hancock ..	cattle, 4; skunks, 3; cats, 2; squirrels, 1; swine, 1
Henry	skunks, 1; cats, 1; horses, 1; foxes, 1
Howard	foxes, 1
Humboldt	cattle, 2; skunks, 2; cats, 2; foxes, 1
Ida	cattle, 1
Iowa	skunks, 1
Jackson	foxes, 1; raccoons, 4
Jasper	cattle, 4; dogs, 1
Johnson	cattle, 1; skunks, 4; dogs, 1; swine, 3
Jones	cattle, 1; skunks, 1
Keokuk	skunks, 1; dogs, 1
Lee	dogs, 1
Linn	skunks, 1; dogs, 1
Louisa	skunks, 1
Lucas	skunks, 1; cats, 1
Madison	cats, 2
Mahaska	cattle, 1; raccoons, 1
Marion	skunks, 2; cats, 1; dogs, 1; swine, 1
Marshall	dogs, 2; cattle, 1; swine, 1
Mitchell	dogs, 1; skunks, 1
Monona	skunks, 1
Montgomery	cattle, 1
Muscatine	cattle, 1
O'Brien	cattle, 3; skunks, 2
Osceola	skunks, 2
Page	raccoons, 1
Pocahontas	skunks, 4; dogs, 2
Polk	cattle, 1; dogs, 67; swine, 1; raccoons, 1
Poweshiek	cattle, 1; cats, 1
Sac	swine, 1; cattle, 1; skunks, 1
Scott	cattle, 1; squirrels, 1; skunks, 1
Shelby	cattle, 2
Sioux	skunks, 2
Story	cattle, 2; dogs, 5; cats, 1; swine, 2
Tama	cattle, 1
Union	skunks, 1
Van Buren	skunks, 1; foxes, 1
Warren	dogs, 7; cattle, 1
Washington	cattle, 8; skunks, 3; dogs, 1
Webster	dogs, 13
Winnebago	cattle, 1
Winneshiek	cattle, 1
Woodbury	dogs, 1
Worth	cattle, 1
Wright	cattle, 1; skunks, 2; dogs, 2

(Continued on page 407)

NEWS NOTES

From The Committee On Medical Service

NEWS NOTES FROM THE COMMITTEE ON MEDICAL SERVICE

A newly created department of Physician Relations is now functioning as a part of the Blue Shield organization. This department is under the direction of Donald L. Taylor, Field Secretary, Iowa State Medical Society, who is on loan to Blue Shield half-time for one year for the purpose of organizing a Physician Relations program. It is the plan to employ a staff of field men who will work with individual doctors and county medical societies to improve the medical profession's understanding of Blue Cross-Blue Shield. The first field man to be employed is Mr. Gerald Buckles of Des Moines, a recent graduate of Drake University. Mr. Buckles is married, 30 years of age and a veteran of World War II. He was a journalism major and has had experience as a news reporter. His military service was with the 34th division of the U. S. Army. He served four and one-half years and spent three and one-half years overseas. These field men who are to be employed will make individual contacts, conduct meetings of the doctors' office personnel, arrange meetings with the hospital medical staff, handle Blue Shield complaints from the public and profession, develop a continuity of contacts with industrial groups in order to relate the attitude of the profession toward Blue Cross-Blue Shield.

BLUE CROSS-BLUE SHIELD PLANS MEETING

Mr. Woodrow H. Sherin, Executive Director, Iowa Medical Service, attended a meeting of district 10 Blue Cross-Blue Shield Plans in Winnipeg, Manitoba, Canada, August 14 to 15. These meetings were held primarily for the purpose of exchange of ideas and information as acquired through experience in operation.

COMMITTEE MEETING

The Committee on Medical Service will not hold a press conference this fall, but instead will hold an all-day meeting in Des Moines September 26 to plan its program for the coming year. Committee members will report on work done during the summer months and projected programs for the winter.

Following this session, the committee will meet with the Executive Council of the State Society for lunch and general discussion. Hotel Savery will be headquarters.

STATE DEPARTMENT OF HEALTH

(Continued from page 406)

Distribution of Cases by Species		Distribution of Cases by Month	
Species	No. of Cases	Month	No. of Cases
Dogs	137	January	50
Skunks	72	February	41
Cattle	67	March	51
Swine	13	April	46
Cats	13	May	52
Foxes	7	June	59
Raccoons	7	July	22
Squirrels	2		
Sheep	2	TOTAL	321
Horses	1		
TOTAL	321		

During the first seven months of this year, 321 cases were reported from 67 counties. This compares with 227 cases reported during the same period last year.

MORBIDITY REPORT

Disease	July 1951	June 1951	July 1950	Most From	Cases Reported These Counties:
Diphtheria	0	0	1	.....
Scarlet Fever	7	30	9	Scattered	
Typhoid Fever	2	0	0	Dubuque, Iowa	
Smallpox	0	0	0	.....
Measles	204	807	109	Dubuque, Jackson, Story	
Whooping Cough ..	78	73	226	Cerro Gordo, Clinton	
Brucellosis	57	56	34	Cerro Gordo, Keokuk	
Chickenpox	48	192	87	Dubuque, Madison, Keokuk, Story	
Meningitis, men. ..	3	0	6	Louisa, Lyon, Woodbury	
Mumps	93	225	50	Black Hawk, Linn, Story	
Pneumonia	8	6	2	Scattered	
Poliomyelitis	42	7	157	Linn, Monona, Wapello	
		(plus 3 del.)			
Rabies in Animals ..	22	59	34	2 Hancock, 5 Polk, others scattered, 1 to a county	
Tuberculosis	94	64	47	For the state	
Gonorrhea	25	54	73	For the state	
Syphilis	133	193	183	For the state	

SPEAKER'S BUREAU RADIO SCHEDULE

WOI—Thursdays at 11:15 a.m.

TEA FOR THREE

September 6 —Relaxation

September 13—Teeth

September 20—Posture

September 27—Accidents

WSUI—Tuesdays at 11:45 a.m.

THE BEST IS YET TO BE

September 4 —Fear Is the Enemy

September 11—The Reluctant Guest

September 18—Mothers Should Retire, Too

September 25—Home Is Inside of You

Iowa Academy of General Practice

President—Cecil V. Hamilton, M.D., 145 E. 4th St., Garner

President-Elect—Joseph G. Fellows, M.D., 405½ Douglas Ave., Ames

Vice President—Ivan T. Schultz, M.D., 106 N. Taft St., Humbolt

Secretary-Treasurer—William M. Sproul, M.D., 912 Equitable Bldg., Des Moines

POST-GRADUATE STUDY REQUIREMENTS FOR REGULAR AND ASSOCIATE MEMBERS

1. *What are they?*

150 hours over each three years, 50 hours of which must be obtained from formal post-graduate studies.

2. *What is meant by "Formal" Post-Graduate Studies?*

A. Courses sponsored and presented as such by medical teaching institutions.

B. Courses sponsored as such by the Iowa or American Academy.

C. Various courses throughout the state may be specifically approved as such by the Board of Directors of the Iowa Academy.

D. Certain courses over the nation may be approved by the American Academy.

E. Courses out of the state approved as such by the local state chapter of the Academy.

F. Annual meeting of the American Academy of General practice.

3. *What is included in the 100 hours of Non-Formal Post-Graduate Studies?*

A. Hospital staff meetings and clinicopathologic conferences.

B. County, district or state medical society scientific meetings.

C. A.M.A. or other scientific medical meetings drawing attendance from the nation or a large district.

D. Scientific medical meetings of study clubs or various state groups; e.g., Iowa Obstetrical or Iowa Pediatric Society.

E. Cancer society or Heart association scientific meetings.

F. All other scientific medical meetings.

4. *How is the Time Credit figured?*

On a clock-hour basis unless a definite accredited time has been designated by the approving body. In the latter case, official credit is announced.

5. *How difficult is it for a busy general practitioner to meet these requirements?*

An average of 16 and two-thirds hours formal study and 33 and one-third hours other study a year is easily attained. The three meetings presented by the Iowa Academy in Des Moines this fall and winter will give 18 hours formal credit. Attendance at nine hospital staff meetings of one hour each, nine county or district meetings of one hour each, or more, depending on the number of speakers and time allotted to each and the whole of the State Medical Society annual meeting will cover the 33 hours. Most general practitioners will attend one or more informal meetings in Chicago, Omaha, Saint Paul, Rochester, or some other place, during a three-year period.

DO NOT FORGET!

Formal Post-Graduate Meeting, Hotel Savery, Des Moines, September 6th

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

CLINICAL PEDIATRIC UROLOGY, by *Meredith Campbell*, M.S., M.D., F.A.C.S., Professor of Urology, New York University Post-Graduate Medical School; Visiting Urologist, Bellevue and University Hospitals, New York; With a section on Nephritis and Allied Diseases in Infancy and Childhood by *Elvira Goettsch*, A.B., M.D., Associate Professor of Pediatrics, University of Southern California School of Medicine and Assistant Medical Director of the Children's Hospital Society of Los Angeles; and *John D. Lyttle*, A.B., M.D., Late Professor of Pediatrics, University of Southern California School of Medicine and Medical Director of the Children's Hospital Society of Los Angeles. W. B. Saunders and Co., Philadelphia, 1951. Price \$18.00.

FROM A DOCTOR'S HEART, by *Eugene F. Snyder*, M.D. Philosophical Library, New York, 1951. Price \$3.75.

THE MANAGEMENT OF FRACTURES, DISLOCATIONS AND SPRAINS, by *John A. Key*, B.S., M.D., Clinical Professor of Orthopaedic Surgery, Washington University School of Medicine; Associate surgeon, Barnes, Children's and Jewish Hospitals, St. Louis, Mo.; and *H. Earle Conwell*, M.D., F.A.C.S., Associate Professor of Orthopaedic Surgery, University of Alabama School of Medicine; Chief of the Orthopaedic Service, South Highland Infirmary; Consulting Orthopaedic Surgeon to Carraway Methodist Hospital and Baptist Hospital; Attending Orthopaedic Surgeon, Children's Hospital, Jefferson-Hillman Hospital, East End Memorial Hospital and St. Vincent's Hospital, Birmingham, Ala. C. V. Mosby Co., St. Louis, Mo., 1951. Price \$16.00.

METABOLIC METHODS, Clinical Procedures in the Study of Metabolic Functions, by *C. Frank Consolazio*, Chief of Biochemistry, United States Army Medical Nutrition Laboratory, Chicago, Ill.; *Robert E. Johnson*, M.D., D. Phil. (Oxford), Professor and Head of the Department of Physiology, University of Illinois, Urbana, Ill.; and *Evelyn Marek*, M.A., Biochemist, United States Army Medical Nutrition Laboratory, Chicago, Ill. C. V. Mosby Co., St. Louis, Mo., 1951. Price \$6.75.

PRACTICAL CLINICAL PSYCHIATRY, by *Edward A. Strecker*, A.B., M.D., Sc.D., Litt.D., LL.D., M.D., Professor of Psychiatry, School of Medicine, University of Pennsylvania; *Franklin G. Ebaugh*, A.B., M.D., Professor of Psychiatry, University of Colorado, School of Medicine, Director, Colorado Psychopathic Hospital; and *Jack R. Ewalt*, M.D., Professor of Neuro-Psychiatry, Administrator of Hospitals, University of Texas Medical Branch, Galveston, Texas. Section by *Leo Kanner*, M.D., Associate Professor of Psychiatry, Johns Hopkins University School of Medicine. Seventh Edition. The Blakiston Co., Philadelphia, 1951. Price \$7.00.

PROCEEDINGS OF THE SECOND CLINICAL ACTH CONFERENCE, Volume I, Research; Volume II, Therapeutics, edited by *John R. Mote*, M.D. The Blakiston Co., Philadelphia, 1951. Price \$8.50 each.

REVIEW OF PHYSIOLOGICAL CHEMISTRY, by *Harold A. Harper*, Ph.D., Professor of Biology, University of San Francisco Lecturer in Surgery, University of California School of Medicine, San Francisco, Biochemist Consultant to Metabolic Research Facility, U. S. Naval Hospital, Oakland, Director, Biochemistry Laboratory, St. Mary's Hospital, San Francisco. Third Edition. University Medical Publishers, Palo Alto, Calif., 1951. Price \$3.50.

BOOK REVIEWS

THE NEUROSIS, Diagnosis and Management of Functional Disorders and Minor Psychoses, by *Walter C. Alvarez*, (W. B. Saunders Co., Philadelphia, \$10.00).

In medical school we were taught that a "patient's complaint is organic until proven otherwise." My suspicions of the fallaciousness of this adage are now confirmed by Dr. Alvarez. Much time and money are wasted by our unwillingness to search for neurotic evidence in every patient. In this book there are

hundreds of hints to assist us in quickly spotting the neurotic or psychotic patient while still, of course, steadfastly looking for organic disease. Written in an easy, conversational style that reads more like a novel than a text, this book is chock-full of valuable suggestions for diagnosing and managing psychoneurotic illnesses. Dr. Alvarez does not try to transform the internist or general practitioner into a psychiatrist, but teaches him to avoid the common error of failing to recognize when nervous disease dominates the symptom-complex. This is one of the most important and helpful books this reviewer has ever been privileged to recommend.—*A. G. Lueck, M.D.*

SURGICAL FORUM, Proceedings of the Forum Sessions of the Thirty-Sixth Clinical Congress of the American College of Surgeons, Boston, Mass., October, 1950, *O. H. Wangenstein*, M.D., Chairman; *Warren H. Cole*, M.D.; *Robert E. Gross*, M.D.; *Michael L. Mason*, M.D.; *Carl A. Moyer*, M.D. and *I. S. Ravdin*, M.D. (W. B. Saunders Co., Philadelphia, 1951).

This book consists of 639 pages presenting the Proceedings of the Forum Sessions of the Thirty-Sixth Clinical Congress of the American College of Surgeons, a report of surgical research for 1950.

The book is divided into surgery of the various organs—heart, lungs, stomach, etc. These sections are composed of individual articles prepared from research study in various teaching institutions. The articles are concise and easy to read. They deal mainly with animal experimentation, and the book is, therefore, perhaps best used as a reference manual.

For the first time, the surgeon is able to inform himself, by reference to one volume, of the scope of research activities in his field.—*H. E. Wichern, M.D.*

A TEXT-BOOK OF X-RAY DIAGNOSIS BY BRITISH AUTHORS, Volume II, edited by *S. Cochrane Shanks*, M.D. and *Peter Kerley*, M.D. (W. B. Saunders Co., Philadelphia, \$15.00).

This is the second of the four volume series of excellent books on X-ray diagnosis. The third volume was recently reviewed in the May issue of the *Journal*. I think these volumes fulfill the requirements for excellent texts for radiologists, as well as other specialties interested in radiology. This particular volume is well organized and presents data in a concise clear-cut manner. It correlates pathological and radiological impressions in a fashion seen often in the literature but seldom in texts. The style of writing is such that it is a pleasure to read the text.

Illustrations accompany each point the authors make. These illustrations are positives but detail is such that they do not nullify in the least the high diagnostic quality of the book.

The book is divided into two sections: Part One is the cardiovascular system. The anatomy of the cardiovascular system is given and technic of X-ray examination of such. There is then a progressive

orderly discussion of the pathology of the cardiovascular system.

Part Two is devoted to the respiratory system, discussing the chest in units with reference to the chest walls, diaphragm, lung fields, lobes and fissures, bronchi, lymphatic system, etc., in minute detail of the various components.

Evidence of there having been considerable effort on more recent advances is shown in the excellent work on cardiovascular surgery and the radiologist's responsibility, and also the clean cut explanation of findings in the pneumoconiosis diseases, particularly Beryllium poisoning.

I think these volumes should be on every physician's book shelf who is interested in X-ray.—*F. A. Springer, M.D.*

HEART DISEASE, ITS DIAGNOSIS AND TREATMENT, by *Emanuel Goldberger, M.D.* (Lea and Febiger, Philadelphia, \$10.00).

This book, a fitting companion to his previous publication, *Unipolar Lead Electrocardiography*, has been written for the practicing physician. All phases of cardiology are thoroughly discussed, and the practical aspects of heart disease is presented in a clear and concise manner. There is none of the "impossible theory" for the reader to wade through before reaching his objective. Dr. Goldberger emphasizes the practical approach to both the diagnosis and treatment of heart disease. The book is "meaty" and up-to-date. I believe that the author had the general practitioner always in mind when he presented this volume to the medical profession.—*G. H. Finch, M.D.*

HANDBOOK OF PEDIATRIC MEDICAL EMERGENCIES, by *Adolph G. DeSanctis, M.D.* and *Charles Varga, M.D.* (C. V. Mosby Co., St. Louis, \$5.00).

This excellent book describes the treatment of various emergencies as they occur in pediatrics. It deals with emergencies of the major systems, drowning and poisoning, as well as miscellaneous emergencies and the care of the premature baby.

The last chapter describes and illustrates various pediatric procedures such as subital, external jugular, internal jugular, femoral and scalp vein puncture. The technics of lumbar puncture, of subdural tap and of many other procedures are included.

Valuable for quick reliable reference, this book is recommended to all doctors who care for children.—*J. M. Standefer, M.D.*

GERIATRIC NURSING, by *Kathleen Newton, R.N.* (C. V. Mosby Co., St. Louis, \$4.50).

This book is primarily intended to acquaint the members of the nursing profession with the many complex problems encountered in caring for the aged individual. An attempt is made to present many of the psychological and sociological difficulties which are encountered when dealing with elderly individuals. It is felt by the author that this phase of therapy in the case of specific illnesses can be traced to emotional instability. A wide variety of factors, including financial insecurity and many others, can account for the psychological difficulties.

The second portion of the book is concerned with the discussion of good hygienic measures to be instituted in care of the older person. Many helpful suggestions are given which aid in prevention of disease. Mental hygiene is particularly stressed, as is also the nutritional status of the individual. The greater portion of the text is concerned with a discussion of the diseases affecting the major systems of the body, the more common ones being given special attention.

The author has succeeded admirably in presenting the problems of geriatric nursing, and the book is to be recommended to all members of the nursing profession.—*R. E. Jongewaard, M.D.*

DIABETES MELLITUS, Principles and Treatment, by *Garfield G. Duncan, M.D.* (W. B. Saunders Co., Philadelphia, \$5.75).

This author is well-known for his interest in the diabetic patient from the clinical standpoint; he is conservative but not over-exacting in his management of the disease. This book follows the trend of his practices. It takes the physician reader through the highlights of diabetes: history, pathology, disturbed physiology, complication and treatment. No time is wasted on unimportant detail. The diet section follows the pattern adopted by the American Diabetes Association, which is simpler than the older rigid schedules. The various laboratory studies and home testing methods used in diabetes are described, including the newer handy and quick tests. Altogether, this is a useful book for those who treat diabetic patients.—*A. G. Lueck, M.D.*

CLINICAL UNIPOLAR ELECTROCARDIOGRAPHY, by *Bernard S. Lipman, M.D.* and *Edward Massie, M.D.* (The Year Book Publishers, Chicago, \$5.00)

This much needed and well planned book is confined almost entirely to the material suggested by the title. The text was inspired by the success achieved at Washington University School of Medicine of a booklet which led to the present monograph. This is the first really satisfactory teaching outline of unipolar electrocardiography which this reviewer has seen and will be of real value in teaching the principles of unipolar electrocardiography.

The illustrations are clear throughout. The language is simple and non-technical at all times. Those who are experienced in the interpretation of electrocardiograms but who have not learned the significance of unipolar electrocardiography will find this monograph ideally suited to their needs. Those who are now learning about the entire field for the first time will do well to supplement the standard books with the one being reviewed.—*H. Margulies, M.D.*

LET'S COOK IT RIGHT, by *Adelle Davis* (Harcourt, Brace & Company, New York, \$3.00).

Although the author of this cookbook stresses yogurt, wheat germs and blackstrap molasses, her cookbook contains many worthwhile hints on cookery. She believes in good nutrition, properly seasoned and prepared.—*M. L. McCord.*

SOCIETY PROCEEDINGS

MEETINGS

Southwest Iowa Medical Society

Dr. Ralph A. Dorner, Des Moines, spoke on "Traumatic Injuries of the Chest" at the Southwest Iowa Medical Society meeting July 11 at the Chicken Inn in Creston.

Upper Des Moines Valley

The Upper Des Moines Valley Medical Association held its annual summer meeting at The Inn on West Okoboji Lake August 2. A symposium, "Care of the Newborn," was conducted by the State Department of Health. Dr. John H. Randall, of the Department of Obstetrics and Gynecology of the SUI College of Medicine, spoke on "Influence of Obstetrical Care of the Newborn." The meeting also included speeches on complications of fracture treatment, salicylate poisoning in children, pain in the neck and shoulders and pitfalls in the diagnosis of surgical chest lesions.

PERSONALS

Dr. William R. Arthur, Hampton physician for 37 years, retired from active practice August 1 because of ill health.

Drs. Henry J. Billerbeck and **Merlin U. Broers**, recent graduates of the University of Nebraska Medical School, Omaha, Nebr., are now practicing medicine in Schleswig and Denison. Both doctors interned at St. Joseph's Hospital in Sioux City.

Dr. Galen C. Boller, who practiced medicine in Traer prior to World War II, recently located in Waterloo after completing a two-year course in internal medicine and cardiology at the Los Angeles County Hospital in Los Angeles, Calif.

Dr. Robert W. Brindley, Cedar Falls, recently began the practice of medicine in Perry after purchasing the practice of the late **Dr. John F. Loosbrock**. A graduate of the SUI College of Medicine, Dr. Brindley interned at Broadlawns Hospital, Des Moines.

Dr. J. Wesley Crossley, formerly of Ringsted, has begun the practice of medicine in Mason City.

Dr. Robert E. Dunn, Spring Valley, Ill., recently began the practice of medicine in Sumner. A 1948 graduate of the Washington Medical School, St. Louis, Mo., Dr. Dunn interned at the Presbyterian

Hospital, Chicago. He recently completed work at the SUI College of Medicine.

Dr. Edward W. Ebinger, Grosse Point, Mich., has become associated with **Dr. Dennis G. Emanuel** in Ottumwa. A 1945 graduate of the SUI College of Medicine, Dr. Ebinger served his internship and residency at Mt. Carmel Mercy Hospital, Detroit, Mich.

Dr. Paul Ferguson, formerly of Hopkinton, has joined the staff of the McCrary-Rost Clinic and Hospital in Lake City. A graduate of the SUI College of Medicine, Dr. Ferguson recently completed his internship at Fitzsimmons General Hospital, Denver, Colo.

Dr. Edwin O. Gilfillan, who has been associated with the Sault Polyclinic at Sault Ste. Marie, Mich., since 1936, recently joined the staff of the Gilfillan Clinic in Bloomfield. A 1933 graduate of the SUI College of Medicine, Dr. Gilfillan served his internship and residency at the Henry Ford Hospital, Detroit, Mich.

Dr. LaVerne F. Grams, formerly of Hartley, has become associated with **Dr. Harley Feldick** in Buffalo Center. Dr. Feldick has purchased the facilities of **Dr. George F. Dolmage**, who recently retired.

Dr. Richard A. Hastings, formerly of Athens, Pa., recently joined **Dr. Siegmund F. Singer** in Ottumwa in the practice of medicine, specializing in radiology. A 1947 graduate of Jefferson Medical College, Philadelphia, Pa., he interned at the Robert Packer Hospital and Guthrie Clinic, Sayre, Pa.

Dr. Herbert M. Huston, retired Ruthven physician, has been presented with an award for his long service to the public of Ruthven, Palo Alto and Clay Counties by the Emeritus Club of the State University of Iowa.

Dr. Herbert M. Kersten, who has been associated with his father, **Dr. Ernest M. Kersten** in Fort Dodge, has begun postgraduate work at the SUI College of Medicine.

Dr. Kenneth F. Kingsbury, formerly of Iowa City, has become associated with **Dr. Lloyd J. Gugle** in Ottumwa. A 1943 graduate of the SUI College of Medicine, Dr. Kingsbury served his

internship at Sacramento County Hospital, Sacramento, Calif.

Dr. Ralph P. Lagoni has begun the practice of medicine in Eldridge. A graduate of the SUI College of Medicine, Dr. Lagoni served his internship at the Receiving Hospital, Detroit, Mich.

Dr. William G. McAllister, Sioux City, has begun the practice of medicine at the Heilman Clinic in Ida Grove. A graduate of the SUI College of Medicine, Dr. McAllister interned at St. Joseph's Hospital, Sioux City.

DEATH NOTICES

Dr. Charles Herbert Cronk, 90, retired Bloomfield physician, died August 8 at the Davis County Hospital, after being in failing health for about five years. Dr. Cronk was graduated from the Keokuk Medical College in 1900 and soon afterward began the practice of medicine in Bloomfield. Dr. Cronk was a life member of the Davis County and Iowa State Medical Societies.

Dr. Francis Fisher Ebersole, 73, practicing physician in Mount Vernon for 43 years, was killed in a highway accident near Hastings, Nebr., August 6. He was graduated from Johns Hopkins University in 1906. Dr. Ebersole was a member of the Linn County and Iowa State Medical Societies.

ROSTER OF IOWA PHYSICIANS IN MILITARY SERVICE

As of August 15, 1951

Ackerman, J. H., Clarksville
(Hot Springs, Ark.).....U.S.P.H.S.
Alberts, M. E., Des Moines
(Des Moines).....Lt. (jg), U.S.N.R.
Ashby, J. D., Davenport
(Battle Creek, Mich.).....Major, A.U.S.
Bartholomew, R. D., Lake City
(Palo Alto, Calif.).....Lt. (jg), U.S.N.R.
Bartley, R. L., Sully
(Pensacola, Fla.).....U.S.N.R.
Benge, D. K., Dows.....
Camp, J. R., Thompson
(San Diego, Calif.).....Lt. (j.g.), U.S.N.R.
Carroll, T. J., Sibley.....
Carson, R. W., Winterset
(APO San Francisco, Calif.).....1st Lt., A.U.S.
Coyne, K. M., Burlington
(FPO San Francisco, Calif.).....Cmdr., U.S.N.R.
Dalager, R. D., Ottumwa
(Junction City, Kan.).....A.U.S.
Davidson, M. C.
(APO New York, N. Y.).....Lt. Col., A.U.S.
Davis, S. K., Des Moines
(Seattle, Wash.).....
Donahoe, J. F., Fort Dodge
(San Antonio, Texas).....U.S.A.F.
Fitch, R. E., Des Moines
(Bangor, Me.).....1st Lt., U.S.A.F.
From, Paul, West Des Moines
(San Antonio, Texas).....1st Lt., U.S.A.F.
Gladstone, W. S., Jr., Iowa City
(Crestview, Fla.).....U.S.A.F.

Goenne, W. C., Jr., Davenport
(Tacoma, Wash.).....Major, A.U.S.
Jensen, K. V., Newton
(San Antonio, Texas).....1st Lt., U.S.A.F.
Johnson, A. A. Jr., Council Bluffs
(Fort Worth, Texas).....1st Lt., U.S.A.F.
Johnson, F. N., Madrid
(San Antonio, Texas).....1st Lt., A.U.S.
Johnson, M. H., Iowa City
(Tacoma, Wash.).....Capt., A.U.S.
Keil, P. G., Des Moines (Bangor, Me.).....U.S.A.F.
King, R. E., Des Moines
(APO San Francisco, Calif.).....Capt., A.U.S.
Krause, R. E., Ottumwa.....
Kruse, R. H., Conrad
(San Diego, Calif.).....U.S.N.R.
Kurth, R. J., Waterloo.....A.U.S.
Landis, S. N., Des Moines
(Topeka, Kan.).....Major, U.S.A.F.
Leiter E. R. K., Des Moines (Bangor, Me.)...U.S.A.F.
McCrary, W. A., Lake City
(APO San Francisco, Calif.).....Capt., A.U.S.
Mangan, J. T., Forest City (FPO San Francisco, Calif.)
Marquis, F. M., Waterloo.....A.U.S.
Merkel, B. M., Des Moines
(Bangor, Me.).....Col., U.S.A.F.
Mitchell, R. C., Iowa City
(San Antonio, Texas).....1st Lt., A.U.S.
Montgomery, A. E., Jefferson
(APO San Francisco, Calif.).....Lt. Col., A.U.S.
Mulder, L., Sioux Center
(Sioux Falls, S. D.).....Capt., U.S.A.F.
Neagle, P. E., Dubuque.....
Nordin, C. A., Des Moines
(Lackland Field, Texas).....U.S.A.F.
Odell, J. E., Iowa City (Westlaco, Texas).....
Piburn, M. F., Preston.....1st Lt., A.U.S.
Robb, W. J., Cedar Rapids
(San Diego, Calif.).....U.S.N.R.
Ruble, R. L., Nevada (Camp Chaffee, Ark.)....A.U.S.
Schultz, M. H., Waterloo
(Weaver, S. D.).....Capt., U.S.A.F.
Shaffer, F. J., Iowa City.....Col., U.S.A.F.
Simonsen, M. H., Sioux City
(Oakland, Calif.).....Lt., U.S.N.
Smith, C. B., Iowa City
(Fort Jackson, S. C.).....Capt., A.U.S.
Storck, R. D., Dubuque
(San Francisco, Calif.).....Lt.
Stutsman, R. E., Washington
(San Diego, Calif.).....Cmdr., U.S.N.
Taylor, H. N., Iowa City.....
Tempel, P. F., Steamboat Rock
(Fort Riley, Kan.).....A.U.S.
Thistlewaite, E. A., Des Moines
(Riverside, Calif.).....1st Lt., U.S.A.F.
Thomas, J. H., Sibley (Austin, Texas).....U.S.A.F.
Tice, W. K., Iowa City
(APO San Francisco, Calif.).....A.U.S.
Tvler, D. E., Shenandoah.....U.S.N.R.
Vincent, J. F., Fort Dodge
(Clark Ridge, Ill.).....Capt., U.S.A.F.
Von Lackum, L. S., Oelwein
(FPO San Francisco, Calif.)....Lt. (j.g.), U.S.N.R.
Walz, D. V., Le Mars (Weaver, S. D.)...1st Lt., U.S.A.F.
Waldmann, W. B., Council Bluffs.....
Wehrmacher, W. H., Iowa City
(Oceanside, Calif.).....U.S.N.R.
Wheeler, R. A., Des Moines
(Fort Sheridan, Ill.).....1st Lt., A.U.S.
*Wilkins, D. S., Iowa City
(APO San Francisco, Calif.).....Capt., A.U.S.
Woolfolk, J. H., II, Waterloo
(Weaver, S. D.).....U.S.A.F.
Zeilenga, R. H., Orange City
(Kansas City, Kan.).....1st Lt., U.S.A.F.

* Deceased.

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No. 10

DIAGNOSIS AND MANAGEMENT OF CHRONIC PERIPHERAL ARTERIAL INSUFFICIENCY*

HAROLD N. NEU,** M. D.

AND

WILLIAM J. REEDY,** M.D.

OMAHA, NEBR.

INTRODUCTION

WE FEEL that the increasing importance of the problem of chronic arterial insufficiency justifies a review at this time. We frequently use the term peripheral vascular disease when we mean only peripheral arterial insufficiency, which designates inadequate arterial circulation. Chronic peripheral arterial insufficiency manifests itself in a form in which there is persistent, through variable impairment of the arterial circulation. This is most commonly seen in thromboangiitis obliterans and in arteriosclerosis obliterans.

Dr. Allen Gregg¹ some years ago emphasized that although the past generation or so in medicine has been directing its attention to causation in disease, in the future the nature of the problems which will confront the medical profession will cause attention to be trained upon the degenerative diseases, and of course, peripheral arterial insufficiency is often among these. When we consider that in 1930 there were only 6,500,000 people in the United States 65 years or older, and that on projected estimates by 1980 we may reasonably expect 24,000,000 in that particular category, we can see that the incidence of arteriosclerosis obliterans will necessarily increase. There may be other factors: the more wide spread use of tobacco, particularly among women, may increase this problem. It has been demonstrated by Dr. Grace Roth² and her associates at the Mayo Clinic that tobacco has a definite effect upon the vasomotor status of the peripheral vessels. Then too, the atomic age and all of the complexities of our present day civilization have made us more aware of the interrelationship of the psyche and

the soma and as our neuroses increase there is every reason to believe that the vasomotor factor in chronic peripheral arterial insufficiency may likewise increase.

It is fundamental in the problem of peripheral arterial insufficiency that we must always keep in mind two factors: First, the degree of vasoconstriction which is existing; second, the degree of organic change in the vessel wall. In arteriosclerosis obliterans it is chiefly organic change; yet it is not necessary that the arterial insufficiency here is completely organic. In instances of obliterative arteriosclerosis where there were absent pulsations and other evidences of arterial insufficiency, it has been demonstrated that there is still a capacity of these vessels to dilate.³ In thromboangiitis obliterans there is organic change in the wall, but associated with it may be considerable spasm. It would seem, therefore, that the aim of therapy in every case should be an evaluation as to how much vasoconstriction and how much organic change is present. On this basis the prognosis of a medical regime can be more accurately evaluated. With our present knowledge we can do something about the vasoconstriction, but we can not do anything about the organic change in the vessel wall.

ESSENCE OF DIAGNOSIS

In evaluating the nature of peripheral arterial insufficiency the history is important as in every other condition. Thromboangiitis obliterans (Buerger's Disease) more frequently occurs in men between the ages of 20 to 50 years. It usually appears during middle life but may appear in the sixth and seventh decades at which time it may be associated with arteriosclerosis. Buerger's Disease is rare in women, the incidence being probably less than two per cent. Arteriosclerosis obliterans generally appears in individuals over 50 years of age. It occurs in both sexes but there is a greater incidence among males. The use of tobacco is very significant, because of its clear-cut relationship to the vasomotor changes in the peripheral vessels.

Certainly all of us would do well when confronted by a patient with aching or pain in his legs not to dismiss him lightly as having myalgia

* Presented at the One Hundredth Meeting, Iowa State Medical Society, Sioux City, April 23-25, 1951.

** From the Department of Medicine, Creighton University School of Medicine and Creighton Memorial St. Joseph's Hospital.

or as having some form of arthritis. Too frequently the answer can be found in the peripheral blood vessels. The specific historical indication of chronic arterial insufficiency is intermittent claudication and is characterized by pain in the calf of the leg on walking and relieved by rest. Fatigue, burning and tingling may precede intermittent claudication and are variations of pain due to chronic arterial insufficiency.

When it comes to examining the patient with suspected peripheral vascular disease often the examiner, for reasons of haste or carelessness, does not avail himself of the information available from simple inspection and palpation.

It requires only several minutes to evaluate the vascular status of the extremities by physical examination. One should observe color changes such as pallor or rubor in the dependent position. It is important to elevate the extremities 60 to 90 degrees and note the presence or absence of excessive blanching. Following this procedure the legs are placed dependently and the time required for the normal color to return is noted. A delay in normal color return beyond ten seconds is a significant finding. The presence of trophic changes such as atrophy, blebs, ulceration and gangrene are apparent to the examiner. Temperature changes in an extremity can be fairly accurately determined by palpating with the dorsum of the hand. A decided change at a given level of an extremity is important. A difference between the two extremities is evidence of arterial impairment. It should be pointed out that thromboangiitis obliterans is seen in the upper extremities and is not necessarily confined to the lower extremities.

It is surprising how many of us fail to palpate the peripheral vessels. If the posterior tibials pulsations are absent, circulation is usually impaired but these vessels may be absent in about two to five per cent of cases. One must remember that in approximately 12 to 14 per cent of cases there is an anomalous course or absence of the dorsalis pedis⁴ and therefore these should be carefully searched.

Ninety-five per cent of the cases of peripheral arterial insufficiency can be diagnosed with the information thus far elicited from the patient. For those few cases in which the diagnosis is more obscure there are other aids. The use of specialized studies such as oscillometry, skin temperature determinations and plethysmography are not necessary for the diagnosis of arterial insufficiency but do play an important part in distinguishing the elements of increased vasospasm from organic occlusive changes either of which alone or in combination may be responsible for the arterial insufficiency. We wish to point out here that not infrequently a patient with peripheral arteriosclerosis who gets along perfectly well may develop definite signs of peripheral arterial insufficiency if he gets a severe anemia or develops thrombosis of a peripheral artery secondary to

slight trauma or infection. The finding of calcified blood vessels on an x-ray film does not indicate arterial insufficiency if one's physical examination and observation does not show that peripheral arterial insufficiency is present. It may be a useful sign in helping us to differentiate between thromboangiitis obliterans and arteriosclerosis obliterans when peripheral arterial insufficiency can be demonstrated. The reflex vasodilatation tests do have value in that they enable one to determine accurately the degree of vasospasm present. As noted before some of these additional tests are of value in diagnosing some of the more obscure cases and in more accurately forming a correct prognosis. For the vast majority of cases which we encounter they are not required.

ESSENCE OF MANAGEMENT

In the treatment of chronic arterial insufficiency our attempt here is only to suggest a regime of therapy which we have found quite successful in the conservative management of these types of disorders. We will not attempt to appraise the quantitative effects of the numerous pharmacologic and physical agents which have been advocated. It is evident from the literature that no single agent has been uniformly consistent in producing the desirable effect of increased blood flow to the extremities.

General Measures: There are a well-known number of general therapeutic measures which are important. It is quite well agreed that tobacco in any form must be absolutely prohibited for successful results in the management of thromboangiitis obliterans. We explain the implications of continued use of tobacco in this disease to patients and thereby attempt to make him actually feel the need for its discontinuance. Tobacco users among arteriosclerotic patients with peripheral arterial insufficiency are encouraged to stop smoking. The evidence of harm from its continued use in arteriosclerosis obliterans is less disastrous.

The use of proper clothing is stressed. We recommend that these patients wear cotton or wool socks with lined shoes or over-shoes during all seasons when the seasonal temperature is not greater than 80-85° F. Long underwear is advised for the purpose of conserving body heat and diverting its loss through the extremities which serve as a physiological unit in the dissipation of heat.⁵

There is now evidence⁶ to indicate that further atheromatous changes in blood vessels might be inhibited by the use of diets low in cholesterol content. To date we have not emphasized any dietary restrictions in our arteriosclerotic peripheral vascular patients for this purpose alone.

The control of infection and of diabetes when present is a basic principal known to everyone who treats peripheral occlusive vascular disorders.

The use of bed rest is highly effective in patients who complain of severe pain at rest or during a short walking distance and those with trophic changes such as ulcerations, blebs or gangrene.

The environmental temperature is maintained at 85° F. at which temperature maximum vasodilatation seems to occur. This temperature is commonly maintained in hospital wards. We encourage activity for these people while in bed to avoid the hazards incident to two to three weeks of bed rest.

Control of Pain: The selection of drugs for pain relief is contingent upon the severity of the pain. Acetylsalicylic acid in a total daily dosage of 40 to 60 grains is frequently used for this purpose as well as its vasodilatory properties.⁷ Mild continuous sedation is ordered to assuage the dissatisfaction and irritability these long-term sufferers have toward themselves and others.

Measures to Improve Circulation: Buerger's exercises are practiced as described by him,⁸ but with the exception that we do not apply local heat to the legs while in the resting horizontal position. We prefer to use reflex heat by means of electric heating pads or hot water bottles to the abdomen. The heating mechanism is maintained during the complete exercise period.

The use of heat to the extremities is interdicted because of the practical problem of securing absolutely controlled temperatures. If this could be assured then local measured heat would be acceptable. In instances of ulceration we do use local heat in the form of boric acid or saline soaks at a prescribed measured water temperature of 98° F. The temperature of the solution is determined with a thermometer. The mild bacteriostatic and cleansing action of soaks used in this particular way have been useful. Following the soaks a dry sterile bandage is applied. These soaks are repeated two to three times daily for a period of 15 to 20 minutes each. Lanolin is applied over the lower part of the extremity to prevent dryness of the skin.

Agents to Improve Circulation: The vasodilating agents chiefly used by us in the past several years have been Priscoline and whiskey, often prescribed concomitantly during the same day. Whiskey is served in a vehicle with additional caloric value such as gingerale, sugar water or fruit juice with added sugar on the basis that the food value of such a "cocktail" increases heat production.⁹ Priscoline is started orally in 25 mg. doses t.i.d. and increased with tolerance of the patient to 150 mg. daily. Reflex heat as already mentioned is applied as it potentiates the vasodilating effects of Priscoline.¹⁰ This drug may be used intramuscularly in the same total daily dosage.

Our experience with Depropanex has not been as encouraging as with the other pharmacologic agents mentioned. Another agent which is popular among many physicians is the use of typhoid vaccine. This agent should be used with caution in arteriosclerosis.¹¹

A regime of foot hygiene is written out for the patient. An excellent outline for care of the feet is detailed in Joslin's text on diabetes mellitus.¹²

Surgical Measures: The surgical management of gangrene complicating chronic arterial insufficiency is beyond the intended scope of this paper. However, the use of the regime of management of these disorders as already described has allowed lower amputation sites in many patients. We feel it is necessary to comment that in instances where there is moist gangrene with spreading infection and general toxic manifestations that amputation should be done without waiting for the effects of several weeks of conservative management.

There are numerous reports suggesting sympathectomy in arteriosclerosis obliterans. The rationale upon which sympathectomy is based is that it may relieve the functional element of vasoconstriction which is often superimposed on the organic occlusive changes. The vasoconstriction is due to over activity of the sympathetic vasoconstrictor system. From our experience there is evidence to indicate that a continuous intensive program of medical management is also capable of altering the superimposed element of vasoconstriction. This is the only factor which can be altered in arteriosclerosis obliterans. If this can be altered by continuous medical management it should prevent progressive changes due to decreased blood flow through arteries solely from a vasospastic element. For these reasons we have not used sympathectomy in treating such cases. The results following sympathectomy in thromboangiitis obliterans, as reported in the literature, impress us more favorably than those in peripheral arteriosclerotic occlusive conditions. We have had no experience with sympathectomy in thromboangiitis obliterans.

SUMMARY

In summary, we reiterate that the problem of peripheral arterial insufficiency will become more common. That the diagnosis of this condition can accurately be made by simple measures in the great majority of instances. Success in therapy of this problem should not be an attempt to use any single agent. The emphasis should be upon the employment of a regime of useful measures which can add comfort and perhaps years to the patient's life.

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THE USE AND MISUSE OF HEPATIC FUNCTION TESTS*

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The subject of hepatic function tests is frequently looked upon by the physician with a jaundiced eye and a bilious mind. Faulty use and interpretation of these tests have served only to increase his confusion regarding their value as diagnostic aids. The multiplicity and complexity of the liver's functions are exceeded only by the number of tests available to study these functions. Nevertheless with a proper appreciation of the physiologic mechanisms and limitations of the tests and a simple practical scheme for their utilization, these tests can be of great diagnostic and prognostic aid to the clinician in evaluating his hepatic diseased patients.

Before discussing liver function tests, it might be well to emphasize that the diagnosis of hepatic disease depends primarily upon a proper evaluation of the patient's clinical history and the performance of a thorough physical examination since liver function tests and biopsy are merely diagnostic aids which may be of great help in assaying the patient's condition. Bearing this in mind we may then consider some of the limitations of hepatic function tests.

The multiplicity and complexity of the physiologic functions of the liver together with the concept of dissociation of liver function must be kept in mind. Not all hepatic functions are simultaneously disturbed. Thus a test measuring one particular function may be abnormal while other tests yield normal results. Some functions of the liver are inhibited in early stages of the disease, others are not affected until late in the disease process. Thus we have tests of different sensitivity which are useful only in the proper stages of the disease. Another factor limiting the value of hepatic function tests is the remarkable reserve and regenerative powers of the liver. It has been demonstrated in animals that as much as 80 per

cent of the liver can be removed before abnormal results are obtained with hepatic function tests. Thus liver damage may be present without detection by function tests.

Liver disease is not a static process and often a proper interpretation is dependent upon repeated performance of tests rather than upon a single observation. As with any other laboratory diagnostic procedures, liver function tests are not 100 per cent perfect. False negative reactions can occur even with severe liver damage and conversely false positive results occur in normal individuals having no apparent liver damage. Furthermore, choice of a test may be influenced by some pathologic condition other than hepatic which the patient may have. For example, the use of the albumin-globulin ratio as an hepatic function test is contraindicated in a patient who also has nephrosis since the A/G reversal may be due to the renal rather than the suspected hepatic pathology. One of the most important shortcomings in the use of liver function tests is their limited availability. Most of these tests must be performed in a laboratory. Many of the smaller laboratories are not equipped to perform some of the more technically different procedures. Indeed there are many physicians who have no easy access to any of these procedures. Where he is not handicapped by this condition, the physician who has an understanding of the shortcomings and physiologic mechanisms of hepatic function tests and who knows how to use them judiciously will find them of inestimable aid in evaluating his patients with hepatic disease.

There are two main reasons for the performance of liver function tests. The first is to assist in the differential diagnosis of hepatobiliary disease. The physician may have a jaundiced patient and it is essential for him to determine whether the patient has a "medical jaundice" (hepatitis or cirrhosis) or a surgical jaundice (extrahepatic obstruction due to cholelithiasis or neoplasm). Choice of medical or surgical management will be dependent upon this important differentiation. The second reason for performing hepatic function studies is to detect the presence and extent of liver damage. This need not necessarily be restricted to the jaundiced or hepatic diseased patient and is useful in directing medical management of the patient.

The choice of which hepatic function tests to use will depend upon the particular problem confronting the clinician. Is he faced with a problem of the differential diagnosis of a jaundiced patient? or does he merely wish to determine whether a patient with a known diagnosis has any hepatic dysfunction? The most frequent use of hepatic function tests is in the differential diagnosis of the jaundiced patient.

There are many types of classifications of hepatic function tests. The following is one which the author has found practical and quite helpful in formulating a definite scheme or system for

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their use. Liver function tests can be classified broadly into three main groups (Chart 1): One group which merely measures the degree of jaundice, a second group in which are included tests for liver cell damage and a third group com-

Chart 1. Classification of Hepatic Function Tests

I. Tests measuring degree of jaundice	Normal Values
1. Icteric index	2-6
2. 1 minute bilirubin	up to 0.2 mg. %
30 minute bilirubin	up to 1.0 mg. %
II. Tests measuring parenchymal damage	
A. Functional abnormality	
1. Bromsulfalein retention (5 mg./kilo)	0-5 %
2. Albumin-globulin ratio	1.25-3.5
3. Hippuric acid excretion (IV)	0.7 Gm.
4. Galactose tolerance test (Oral)	0-3 Gm.
5. Cholesterol esters	60-75 %
6. Urinary urobilinogen	0.5-3.0 mg./24 hrs.
7. Prothrombin response to par. vit. K	85-100 % of normal control increase 10 % 24 hrs. 15 % 48-72 hrs. after par. vit. K
III. Tests measuring obstruction or disturbance of bile flow	
1. Total cholesterol	150-275 mg. %
2. Alkaline phosphatase	1-4 B.U.

posed of tests measuring obstruction or interference with bile flow. Attention should be called to the fact that in the following discussion only the simple and more frequently used tests are included.

The first group of tests are merely methods for the determination of the presence and degree of jaundice and is also useful for following the progress of the disease. These tests do not differentiate between the medical and surgical types of jaundice although they are useful in helping to distinguish between the benign and malignant forms of extrahepatic obstruction. The former condition is accompanied by a lesser degree and intermittency of the jaundice. It should be remembered that the icteric index is a non-specific color comparison and hemolysis and coloring material in food and drugs will affect the color of the serum and give falsely elevated values. The one minute-30 minute bilirubin determination is the method of choice for determining the degree of jaundice; the one minute value measures direct bilirubin and the 30 minute value, the total bilirubin. The difference between these two values is a measure of the indirect bilirubin. An elevation of the latter with a simultaneous absence of bilirubin in the urine indicates hemolytic jaundice.

The second group of tests measures parenchymal damage and can be subdivided into two types. One type which measures some particular liver function and a second type whose mechanism depends upon the fact that with parenchymal damage there are qualitative and quantitative changes in serum albumin and globulin (particularly gamma globulin) which cause the test to become abnormal. Both types of tests in this second group are usually abnormal in the medical types of jaundice and normal in the non-complicated extrahepatic obstructive jaundice cases. There are, however, several pitfalls which must be avoided in the use of these tests. Adequate control factors

which might affect the accuracy of the results must be considered. The physiologic mechanism of many of these tests are influenced by factors other than liver. For example, the conversion of galactose to glucose by the liver is undoubtedly affected by the complex interrelationships present in carbohydrate metabolism. Another factor which must be considered is the renal status of the patient where the tests depend on the urinary detection of a substance such as hippuric acid. Technical factors must also be taken in consideration in the interpretation and choice of tests. For example, cholesterol ester determination is technically one of the more difficult laboratory procedures and is not performed by many laboratories and if determined, unless the laboratory is known to be reliable, the results may not be. Limitation of a particular test and sensitivity are factors which must be considered. The bromsulfalein retention test is a sensitive and excellent test for detecting lesser degrees of hepatic damage. However, it is of little use in the differential diagnosis of a jaundiced patient inasmuch as in the presence of moderate jaundice it is abnormal in both the medical and surgical types of jaundice despite the probable absence of parenchymal damage in the latter condition. The galactose tolerance test does not become abnormal till the hepatic damage is marked and therefore cannot be used as a test in early hepatic insufficiency.

The third group of tests are those measuring obstruction or interference with bile flow and again as in the previous group of tests, other factors which may influence the results must be taken into consideration. For example, bone lesions may cause alkaline phosphatase elevations and similarly the cholesterol level may be affected by glandular and metabolic diseases. In the medical types of jaundice total serum cholesterol level is normal or even depressed depending on the degree of damage. The serum alkaline phosphatase is normal or slightly elevated. In cases of extrahepatic obstructive jaundice, the cholesterol and alkaline phosphatase levels will be elevated and the degree of elevation will depend upon the degree of obstruction.

A fundamental principle which must be understood by the clinician who is using function tests is that with a "medical" or parenchymal type of jaundice, hepatic dysfunction is mirrored early by an abnormality in the tests measuring parenchymal damage. The tests measuring obstruction or interference of bile flow are little affected. On the other hand, in cases of extrahepatic obstruction, the tests measuring parenchymal damage are usually unaffected early in the stage of the disease whereas the "obstructive" tests are usually elevated. With extrahepatic obstruction of long duration or with complicating infection, the secondary parenchymal damage which results may cause the hepatic test pattern to simulate that of medical jaundice. Occasional cases of medical jaundice in the extrahepatic obstructive phase such as cho-

langiolitic hepatitis show a function test pattern resembling that found with extrahepatic obstruction.

In the practical utilization of hepatic function tests, the clinician must have some scheme or system for their use and must bear in mind what he wishes to determine. If he merely desires to determine whether his patient has hepatic dysfunction, then the proper choice of one or two tests that measure some hepatic function is sufficient. Bromsulphalein retention is an excellent test for this purpose providing marked jaundice is not present. On the other hand if the physician is faced with the problem of differential diagnosis of a jaundiced patient, he cannot rely on one or two tests. However, by utilizing an appropriate combination or battery of tests and having some simple practical scheme to interpret the results, he may find them of great aid in evaluating the diagnosis of his hepatic diseased patient.

A satisfactory scheme making use of a minimum

number of appropriate tests is the following: one test from the first group. Preferably the one minute-30 minute bilirubin determination is performed for the determination of degree of jaundice.

From the second group measuring parenchymal damage one or two tests such as the albumin/globulin ratio and cholesterol esters which measure some specific function of the liver are chosen. Two tests from the protein group such as the cephalin cholesterol flocculation and thymol turbidity are used in addition. In the medical types of jaundice, these tests would tend to be abnormal. In the non-complicated surgical types of jaundice the results would be normal. Finally, from the obstructive group of function tests, the serum albumin phosphatase and total cholesterol are performed. In the surgical types of jaundice the results of these tests will be moderately to markedly elevated. The medical types of jaundice will show normal or depressed serum total cholesterol

Chart 2. Liver Function Tests

TEST	NORMAL VALUES	PARENCHYMAL JAUNDICE	EXTRAHEPATIC OBSTRUCTIVE JAUNDICE	HEMOLYTIC JAUNDICE
Icterus Index	2-6	Increased 6-150	Marked Increase 50-200	Mild Increase 6-75
1 Min. Bilirubin 30 Min. Bilirubin	0.2 mg./100 cc. 1.0 mg./100 cc. (Upper Limits)	Increase Increase	Marked Increase Marked Increase	Normal Mild Increase
Vandenberg Reaction (Qualitative)	Indirect	Direct	Direct	Indirect
Total Proteins	6-8 Gr./100 cc.	Decreased	* Normal	Normal
Albumin/Globulin Ratio	1.25-3.5	Decreased	* Normal	Normal
Total Cholesterol	150-270 mg./100 cc.	Normal or Decreased †	Increased	Decreased
Cholesterol Ester %	60-80%	Decreased	* Normal	Normal
Alkaline Phosphatase	1-4 Bodansky Units	Normal or Mild Increase 4-15 B.U.	Marked Increase 15-60 B.U.	Normal
Cephalin Flocculation	0-1+	Increased 3+-4+	* Normal 0-1+	Normal 0-1+
Thymol Turbidity	1-4 Units	Increased	* Normal	Normal
Zinc Sulphate Turbidity	2-12 Units	Increased	* Normal	Normal
Galactose Tolerance (Oral)	0-3 Grams	Increased	* Normal	Normal
Hippuric Acid (Intravenous)	0.7 Grams or More Urinary Excretion	Decreased	* Normal	Normal
Urinary Urobilinogen	0.5-30. mg./Day	† Increased	Decreased or Absent	Markedly Increased
Stool Urobilinogen	40-280 mg./Day	† Increased	Decreased or Absent	Markedly Increased
Bromsulphothalien Retention (5 mg./Kilo. Body Wt.)	0-5% Retention	Increased Test Not Performed in Presence of Marked Jaundice		Normal
Prothrombin Time Response to Vit. K (Parent.) (2 mg. Menadione I.M.)	85%-100% of Normal Control	Little Response Increase Less Than: 10% 24 hrs 15% 48-72 hrs.	Good Response Increase More Than: 10% 24 hrs. 15% 48-72 hrs.	Normal Prothrombin Time
Duodenal Drainage Bilirubin Blood Crystals Epith. & Pus Cells	Present Absent Very Few Very Few	Present Absent Very Few Very Few	Absent May Be Present Present C CD Stone Present C Cholangitis	Increased Absent Present C Cholelith Very Few

NOTE: * When an extrahepatic lesion becomes complicated by secondary liver damage or infection, the function test results may simulate those of parenchymal jaundice.

† In severe parenchymal jaundice (intrahepatic obstruction), the bilirubin and urobilinogen results and rarely the other function tests may resemble those found in extrahepatic obstruction.

values and normal or only slightly elevated alkaline phosphatase values (Chart 2).

Thus by combining the results of the appropriate tests used from the three groups a definite parenchymal damage type of pattern or an extrahepatic obstructive pattern are secured. It should be kept in mind that extrahepatic obstruction of long standing or complicated by infection will convert an "obstructive" pattern into one resembling a parenchymal damage type of pattern. Also certain cases of intrahepatic obstruction such as cholangiolitic hepatitis may show the obstructive type of pattern. In conjunction with the history and physical examination the judicious use of the proper hepatic function tests should enable the physician to obtain a satisfactory diagnosis in approximately 80 to 90 per cent of his hepatic diseased patients. Liver biopsy could then be used to improve the percentage of correct diagnosis.

SUMMARY

The laboratory study of the patient is a valuable supplement to but not a substitute for a careful history and physical examination. Bearing this in mind, the physician who has an understanding of the physiologic mechanisms as well as the shortcomings of hepatic function tests and who understands how to use them judiciously will find that they will be of great aid to him in the evaluation of his patients with hepatic disease.

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IOWA TRUDEAU SOCIETY MEETING

The Iowa Trudeau Society will meet November 4 at the State Sanatorium in Oakdale. Subjects to be discussed will be of interest to the general practitioner as well as Trudeau Society members. Although there is no registration fee, reservations are necessary and may be made with Dr. Arthur C. Wise, State Sanatorium, Oakdale.

SOME OBSERVATIONS OF THE MANAGEMENT OF PATIENTS WITH STROKE*

JOHN T. BAKODY, M.D.

DES MOINES

PURPOSE

While the management of the patient with stroke is primarily medical, there are certain facets of the problem which are of interest to the neurosurgeon and it is of these latter which I shall speak.

DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS

The first thing I would like to discuss with you is accurate diagnosis. The practice of scientific medicine of any branch is predicated upon correct diagnosis, and since the patient thought to have a stroke may in reality be harboring a brain tumor, or have ruptured an intracranial aneurysm, for example, it is essential first to take up the problems of differential diagnosis.

Stroke or apoplexy means that a patient has been struck down, and this has come to mean cerebral vascular insult of some sort, either hemorrhage, thrombosis or embolism. In addition to differentiating among these, however, we must also entertain such diagnostic possibilities as brain tumor, chronic subdural hematoma and ruptured intracranial aneurysm, to name the most commonly encountered conditions which may produce what is thought to be a stroke.¹

In the past year, of the patients referred to us because they were thought to have stroke, four proved at autopsy or operation to have brain tumor, one had a chronic subdural hematoma and two had ruptured intracranial aneurysms. I would prefer not to express the relationship of these diagnoses to stroke on a percentage basis, as the total number of cases observed is too small to be of statistical value, but I mention them in order to emphasize the problems present in the study of any particular patient.

In a reported group of 245 patients (Aring and Merritt²) who died with stroke, and in whom the clinical diagnosis was verified by post-mortem examination, thrombosis was the proven diagnosis in 81.8 per cent, hemorrhage in 15 per cent and embolism in 3.2 per cent of this series. In the following remarks, I shall briefly and didactically offer some differential diagnostic points. It should be apparent, that none of these criteria are invariably as stated, and that not in all patients is the clinician always accurate in his diagnosis. Unfortunately, within this group of lesions, there are avenues of diagnostic confusion. After this explanatory preface, let us review the differential diagnosis.

Cerebral thrombosis occurs in previously dis-

* Presented at the One Hundredth Meeting, Iowa State Medical Society, Sioux City, April 23 to 25, 1951.

eased cerebral vessels, usually arteriosclerotic, so that there need not be associated hypertension, and the majority of the patients are beyond 50 years of age. The onset may be gradual and even insidious, or abrupt. Ordinarily the vital signs are not profoundly affected, and the patient need not be comatose, have vomiting or convulsions, although the neurologic disability may be considerable. The spinal fluid is usually clear and not ordinarily under an increase in pressure. The average survival period after thrombosis is approximately 15 times as long as after hemorrhage or embolism.³

In over one half of the patients with cerebral hemorrhage, the onset is climactic, with coma, vomiting and severe headache. The majority of the patients are less than 50 years of age and are hypertensive. The neck very commonly is stiff, three-fourths of the spinal fluids are bloody and in more than one-half the spinal fluid pressure is elevated.² The finding of bloody spinal fluid in a patient who might fit into this group is strong evidence against the diagnosis of thrombosis, but of course does not rule out the rupture of an intracranial aneurysm.⁴

In patients with cerebral embolism the age spread is wide, since cardiac disease, which in almost all cases provides the site of origin for the embolus, may range from the rheumatic heart disease of the young, to the atherosclerotic heart disease of the elderly. The onset of symptoms is abrupt, and the extent of alterations in the vital signs lies midway between that found in hemorrhage or thrombosis. The spinal fluid is usually clear and under normal pressure. The pre-existence of cardiac disease is the most significant factor here.

The rupture of an intracranial aneurysm usually brings about the abrupt onset of headache, stiff neck and sometimes coma. The congenital or berry type aneurysm may rupture at any time during the patient's life, and young or middle-aged adults comprise the majority of such ruptures. The arteriosclerotic aneurysms occur in the older, arteriosclerotic age range, and their ruptures not infrequently are confused with stroke. Parasellar structures are frequently involved by aneurysms arising from the anterior portion of the circle of Willis, and third, fourth, fifth or sixth cranial nerve paralyses are possible. An extra-ocular paralysis, usually of the third nerve, found in cases of non-traumatic subarachnoid hemorrhage, makes rupture of an intracranial aneurysm suspect. Arteriography is often needed to differentiate this group of lesions from cerebral hemorrhage.

Chronic subdural hematoma is found in persons in whom there may be no history of injury to the head, and the clinical history may be one of headache and personality changes for a period of time, culminating in a more or less sudden hemiplegia or coma. The spinal fluid is usually

xanthochromic, and often, but not always, the cerebrospinal fluid pressure is elevated. The possibility of such a lesion is ever present in the group of patients under consideration and should always be considered in the differential diagnosis, since the results of surgical treatment of hematoma so often are gratifying.

Brain tumor occurring in late adult life may likewise mimic stroke. The patient with a brain tumor, and this is too frequently a malignant glioma, may present an apoplectic onset of hemiplegia, for example, and the attending physician feels justified in making a diagnosis of cerebral thrombosis. Obviously, it would be neither proper or desirable to perform complicated or hazardous diagnostic procedures in every patient with stroke, but the determination of the cerebro-spinal fluid pressure is of real value. Most, but not all, patients with brain tumors will show an elevation of the fluid pressure as measured with the water manometer in the course of lumbar puncture, while the cerebrospinal fluid pressure in patients with cerebral thrombosis is normal, for the most part. Patients with bloody spinal fluids can be eliminated from the tumor suspect group, as a working rule, although subarachnoid hemorrhage may occasionally occur with brain tumor. Plain roentgenograms of the skull in the patient thought to have stroke, but with clear spinal fluid under increased pressure, is mandatory. A lateral shift of the pineal gland in such an instance is presumptive evidence of brain tumor. Auxiliary diagnostic procedures, as electroencephalography and intracranial contrast roentgenograms, will be indicated in some patients. A high index of suspicion for brain tumor applied to the problems in the diagnosis of stroke, can only result in greater alertness and more accurate diagnosis.

MANAGEMENT

The majority of the patients with stroke, regardless of the pathologic diagnosis, are seen and managed by the general or medical practitioner. It is not my purpose to discuss the usual medical management of such patients, but I do hope that a discussion of the application of some neurosurgical point of view, or at least my own thoughts on the matter, may prove to be of value.

MANAGEMENT IN CEREBRAL THROMBOSIS

First, I would present the use of procaine infiltration of the cervical sympathetic chain or stellate ganglion in the treatment of cerebral thrombosis. In 1936, Leriche and Fontaine⁵ reported gratifying results in two acute cases of hemiplegia following procaine injection of the homolateral stellate ganglion. Various authors thereafter reported their successes and failures in the use of procaine injection of the stellate ganglion in patients with cerebral thrombosis, but it waited, I believe, for the communication of Gilbert and de Takats,⁶ in 1948, to stimulate

widespread American interest in the efficacy of the procedure. They employed procaine injection of the homolateral cervical sympathetic trunk in 25 patients with cerebral apoplexy, to report good responses in 19 of these. Recovery of consciousness, improvement of speech and motion and conversion of a flaccid paralysis to a spastic paralysis, were advanced by these authors as evidence of improvement following the injections.

That the cervical sympathetic nerves have a significant influence upon the tonus of the cerebral vessels has been doubted by many, and is still being investigated. In the Proceedings of the Association for Research in Nervous and Mental Diseases for 1937, the circulation of the brain and spinal cord was the symposium subject, and one of the stated conclusions of this study⁷ was that the intracranial vessels are remarkably stable and that their vasomotor activity is slight. However, it has been shown that unusual vasospasm leads to veno-capillary dilatation and stasis, plus persistent arteriolar constriction. Such vascular changes have been observed in the brains of experimental animals (Villaret and Cachera in embolic occlusion⁸), and dilation of the pial vessels have been observed in the human brain at operation (Volpitto and Risteen⁹) following stellate blocks.

Leriche and Fontaine⁵ believed that in apoplexy the vascular lesion acted as an irritant to produce a surrounding "halo" of vasospasm, which could be abolished by procaine cervical sympathetic injection, with the sparing of neurons. Mackey and Scott¹⁰ pointed out that the results of vascular occlusion are greater than the mechanical obstruction to the circulation. The collateral vasospasm causes neuronal injury and death which is greater than that which mechanically would result from the original vascular lesion. Relief from this collateral vasospasm is afforded by the cervical sympathetic injection and will result in saving of neurons.

Studies have been reported in which no changes in cerebral blood flow, utilization of oxygen or glucose by the brain, could be demonstrated in patients following cervical sympathetic procaine injections. Schmidt,¹¹ in a recent monograph makes the statement that "while the possibility of cerebral angiospasm from sympathetic impulses in man can neither be affirmed nor denied, at present the preponderance of the evidence is against it." Or to state the problem in another way, the exact relation of procaine injection of the cervical sympathetic chain to apparent changes in the neurologic status of patients with cerebro-vascular disease and cerebral thrombosis, is less than clear.

The vasomotor supply for the intracranial circulation receives its sympathetic component via the cervical sympathetic chain on each side and is distributed throughout the entire vascular tree of the head to both carotid and vertebral com-

ponents. Procaine injection of the cervical sympathetic chain, or stellate ganglion, will temporarily block the sympathetic vasomotor impulses to the intracranial circulation. Fortunately, objective evidence of successful cervical sympathetic injection is provided by the appearance of a Horner's syndrome—ptosis, miosis, conjunctival and scleral injection, anhidrosis of forehead and increased skin temperature of ear and forehead. These changes are homolateral to the injection of course.

TECHNIC OF CERVICAL SYMPATHETIC PROCAINE INJECTION

Many technics for the injection of the stellate ganglion or cervical sympathetic chain have been described: anterior, antero-lateral, posterior and variations of these. Since the stellate ganglion lies on the antero-lateral surface of the seventh cervical vertebra and behind the first rib, it is not easily reached by the tip of an injection needle without endangering the neighboring structures—pleura, lung, brachial plexus, vertebral artery and carotid sheath. We have employed what we consider a simple and fool-proof method, which I learned from Dr. W. James Gardner¹² in Cleveland, Ohio. The needle is introduced just posterior to the posterior border of the sternocleidomastoid muscle and pushed at right angles to the sagittal plane onto the tip of the transverse process of the fifth or sixth cervical vertebra, were approximately 15 cc. of one per cent procaine is desposited. Horner's syndrome should appear in from five to 15 minutes if the injection is successful. Should the point of the needle slide off the tip of the transverse process, it may enter the vertebral artery, but if so, the needle is merely partially withdrawn and again placed upon the bony prominence. Pain may be referred to the shoulder during the injection from irritation of the cervical plexus. Proof of the safety and simplicity of this injection technic lies in the fact that several hundred injections have been made without a single complication, and that it is necessary to demonstrate the technic but once to any member of the house staff, and thereafter he does his own injections without difficulty.

To my knowledge, there has been no series of patients with strokes in which the efficacy of cervical sympathetic injections has been completely controlled. It is true that groups of patients with cerebral thrombosis have been treated both with and without sympathetic injections with a lesser mortality,¹³ and morbidity rate in those receiving injections, but I do not believe that the number of patients so studied is large enough to be statistically significant, nor were there striking differences noted in the results. My own results, in a relatively small number of patients treated have not been adequately controlled, nor adequately studied in all cases.

A group of 29 patients with cerebral thrombosis

was seen at Broadlawns Polk County Hospital in Des Moines. Nineteen of these patients were treated with cervical sympathetic procaine injections, and 12 were considered to be improved following the injections. Eleven patients in whom there was not performed a lumbar puncture, did not receive injection therapy, and three were improved. Five patients in each group died. Improvement was recorded if sensation or use of the extremities increased or improvement of speech occurred. Relief of pain in the hemiplegic extremities was also considered to be an improvement. A similar number of patients with strokes was seen in the three private hospitals in Des Moines, and there was no attempt made to control this group.

Lumbar punctures were performed on all, and injection therapy was not performed in cases of cerebral hemorrhage. Improvement was noted in at least 60 per cent of the thrombosis patients, and interestingly enough, no improvement was noted with the use of the sympathetic injections in two patients with cerebral embolism, although it is in this latter group of patients with embolism that the sympathetic injections is thought by some to be of most value. I have made no attempt to present the results of this therapy, carried out under the joint direction of Dr. Walter D. Abbott and myself, in any detail, as I do not believe the experience is large enough, or well enough controlled, to be of scientific value. We may, however, derive some clinical impressions from such an experience, and it is our belief that cervical sympathetic injections in patients with cerebral thrombosis may be of definite value; but can not ever be thought curative; nor even effective, in all patients.

I have not mentioned the factor of time in the use of the sympathetic injection. If it is true that the benefits following injection therapy are due to the relief of vasospasm associated with the thrombosis, then the more rapidly the therapy is started after the onset of the stroke, the better should be the results. On the other hand, we have observed apparent improvement in stroke patients who were not treated for several months following the onset of the stroke. Why such patients should be improved is not clear, unless other, unknown mechanisms are operative here. Improvement in motion, walking and sensation have been observed. Also, relief of pain in the hemiplegic extremities has been noted in patients with injection therapy many months following stroke.

CERVICAL SYMPATHETIC GANGLIONECTOMY

If a patient has one or more episodes of cerebral thrombosis, with clinical improvement following injection therapy, then the thought that some form of surgical intervention upon the cervical sympathetic chain would be of prophylactic value, is forthcoming. Excision of the superior cervical

sympathetic ganglion homolateral to the involved hemisphere, or bilaterally, has been carried out. In some cases, ligation of the external carotid artery has been done at the time of the sympathetic ganglionectomy, in order that the maximum vasodilating effect might take place in the internal carotid circulation. My experience with this procedure has been too small for me to draw any final conclusions.

MANAGEMENT IN CEREBRAL HEMORRHAGE

There are likewise some neurosurgical applications to the problems presented by the patient with cerebral hemorrhage. In the management of the acute hemorrhage, repeated lumbar punctures with the reduction of the elevated spinal fluid pressure, and the use of hypertonic solutions, is rational, I believe. In addition, surgical evacuation of an intracerebral hematoma, if present, must be considered. Plain roentgenograms of the skull can be made. A lateral shift of the pineal gland suggests an intracerebral hematoma, and this is usually in the temporal lobe in the hemiplegic patient. A burr hole craniotomy with aspiration of the intracerebral hematoma through a brain cannula can be done. In some cases, carotid arteriography or air contrast studies may be needed to establish the diagnosis. Some neurosurgeons take an aggressive attitude and advise investigation and operation during the immediate acute stage.

My own feeling is that since at least one half of the patients with cerebral hemorrhage are going to die,³ regardless of treatment, that as our experience grows, we may be able to reduce the residual neurologic disability in those patients who obviously are going to survive their cerebral hemorrhage, by evacuating intracerebral hematomas in those patients in whom the hematoma can be demonstrated. In the present limited state of our experience and knowledge in these matters, no static concept of the value of surgery in cerebral hemorrhage can be advanced.

DISCUSSION

The thesis is presented that the neurosurgical point of view has something to add to the management of the patient with stroke. Further experience and knowledge is needed before the value of the procedures discussed can be accurately assayed. In the meantime, I believe that an aggressive approach to the problems of the patient with stroke is indicated, and that the use of cervical sympathetic procaine injections in cerebral thrombosis and embolism, and surgical evacuation of intracerebral hematomas in selected cases of cerebral hemorrhage, constitutes the treatment of choice for the present. *Post hoc, ergo propter hoc* reasoning must be avoided in the evaluation of results, and as our experience grows, it is my hope that real contributions will have been made to the management of the stroke patient.

I am not sanguine enough to think that any rule of thumb plan of management will cover all the problems involved; nonetheless, the following is a sheet of instructions for the resident physician staff at Broadlawns Polk County Hospital, and I present it for whatever it may be worth.

STANDARD PROCEDURE FOR THE MANAGEMENT OF CEREBROVASCULAR ACCIDENTS

1. History and physical examination (including neurological).
 2. Obtain spinal fluid specimen as soon as possible after the diagnosis is suspected.
 3. If the fluid is free from blood, cervical sympathetic block (on the same side as the cerebral pathology) should be accomplished as soon as possible.
- Every patient upon whom this procedure is performed should have at least three successive daily blocks. If, however, clinical improvement is evident, cervical sympathetic blocks should be carried out twice daily as long as improvement continues, unless signs of procaine sensitivity are observed.
4. Skull x-ray with particular reference to the position of the pineal body.
 5. Neurologic consultation should be requested on all patients who
 - a. Show bloody spinal fluid
 - b. Show pineal shift
 - c. Show increased spinal fluid pressure
 - d. Show papilledema
 - e. Are under 45 years of age
 - f. Show major residual disability
 - g. Show inequality of pupils
 6. After each cervical sympathetic block, presence or absence of
 - a. miosis
 - b. ptosis
 - c. conjunctival injection
 - d. sweating
 - e. homolateral nasal congestion
 should be recorded.

SUMMARY

In the foregoing presentation, the importance of the accuracy of diagnosis in the patient thought to have stroke is stressed, and the differential diagnosis briefly discussed.

The application of procaine cervical sympathetic injections in patients with cerebral thrombosis, the use of superior cervical sympathetic ganglionectomy as a prophylactic measure in cerebral thrombosis, and the employment of contrast roentgenography and aspiration of intracerebral hematomas in cases of cerebral hemorrhage have been discussed.

No final conclusion as to the value of these procedures can be made at the present time, but it is urged that a more aggressive attitude toward the problems in the management of the patient with stroke be adopted.

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MALARIA IN KOREAN VETERANS*

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The hostilities in Korea have created many important medical problems in the forward areas, the rear echelons, and at home. Since malaria is endemic in Korea, the returning servicemen bring malaria home with them. The purpose of this paper is to discuss a series of cases of malaria, all referable to Korea, diagnosed and treated at the Veterans Administration Hospital, Des Moines, Iowa.

There are four specific species of protozoa causing malaria in man: *Plasmodium vivax*, *Plasmodium falciparum*, *Plasmodium malariae* and *Plasmodium ovale*. Each organism has a characteristic morphology and produces a different clinical picture in man. All the organisms undergo one stage of the life cycle in the human host and another in the mosquito vector.

A typical attack is characterized by paroxysms of chills, fever, cephalalgia, profuse perspiration, multiple joint pains, and occasionally by nausea and vomiting. The paroxysms coincide with the sporulation of the parasite which has grown within the erythrocyte. The parasites confer an infectious immunity and because of this the symptoms may not reflect the number of parasites found in the blood. Mixed infections, such as *Plasmodium vivax* and *Plasmodium malariae* present at the same time, can confuse the clinical picture. Multiple broods of the same species will also alter the classical cyclic recurrence of the paroxysms.

Transmission of the disease requires the presence of an infected human reservoir and in most instances, the anophelene mosquito as a vector. Mechanical transmission via an unclean hypodermic syringe or blood transfusion does occur.

The diagnosis of malaria necessitates the finding of the parasite in a blood smear.

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The period of time covered by our study extends from June 12, 1951, the date of admission of our first patient, to August 26, 1951. All of the cases were hospital patients admitted either directly or through referral by a private physician. Of the 19 proved cases of malaria, all showed *Plasmodium vivax* in the blood smear, and one case had a co-existing *Plasmodium malariae* infection. Nine cases (48 per cent) presented with their initial attack of malaria; 10 cases (52 per cent) had a history of an earlier paroxysm. Of the 10 cases with a history of previous attack, eight were veterans of the current Korean hostilities. The remaining two veterans had served in the Orient, one in Korea in 1951 as a civilian worker and the other in Korea in 1947. Two of the veterans of the present war had been returned to the United States late in 1950 for the treatment of injuries. (One returned in November, 1950, the other in December, 1950.) The patient who returned in November had received therapy for malaria at an Army Hospital in the United States during his period of convalescence. The patient sent to the United States in December had a history of chills while in Korea in August, 1950, and then experienced no other symptoms until August 15, 1951. Another patient was treated by a private physician with atabrine and quinine two days after his return to the United States. He remained asymptomatic until August 1, 1951, the day of admission.

None of the veterans of the present fighting was certain about the type or dosage of suppressive therapy in Korea. A majority received one tablet weekly (probably chloroquin). One patient received medication en route to Korea in July, 1950. He was not given regular suppressive therapy until September, 1950. According to the Office of the Surgeon General,¹ chloroquin is the suppressive medication in use in Korea from April to October. However, many of our patients apparently also received chloroquin during the winter months.

Ten of our 19 cases were admitted to the hospital without first consulting private physicians. Nine patients first consulted private physicians and in three (33 per cent) a diagnosis of malaria was made. Of the six undiagnosed cases, three received penicillin, one penicillin and "sufa," and one had two "manipulations." Two of the patients consulted another physician and in both instances the correct presumptive diagnosis was made, and the patient was referred to the hospital for treatment.

ANALYSIS OF CASES

The average age of patients in this study was 22.3 years, with a range from 18 to 35. The average period of time from the date of departure from the malaria zone to the onset of symptoms was 31 days, with a spread of 14 days to seven and one-half months. From the onset of symptoms to hospital admission, nine days elapsed

(median five days with a spread of one to 72 days).

Symptoms:

Chills, fever, malaise	19
Headache	13
Nausea and vomiting	4
Nausea alone	3
Generalized aching and joint pain	2
Back pain	1
Pain in ribs	1

The chills, fever and malaise were presenting complaints of all patients. Less common prodromata, such as headache, retro-orbital pain, nausea and vomiting and multiple joint pains, were manifested in some of the cases and probably account for the small percentage of diagnoses made prior to admission.

Physical findings: The spleen was palpable in three (16 per cent) of the 19 cases, a much lower percentage than commonly reported. The liver was palpable and tender in four cases (21 per cent). In two other instances the right upper quadrant was tender, but no liver edge was palpated. Three of the patients exhibited herpes simplex.

Laboratory findings: Using 4.2 million RBC/mm.³ and 14 Gm. per 100 cc. hemoglobin as the lower limits of normal,² eight of the 19 cases were anemic. One case was profoundly anemic, having a hemoglobin of 7.5 Gm. per 100 cc. and 2.7 million RBC/mm.³ This patient dated his complaints to 72 days before admission. Only one white blood count (2,800) was abnormal with a normal differential. On one case a relative lymphocytosis was demonstrated.

Nine of 17 cases (53 per cent) had positive qualitative Kahn serological tests. With one exception, all Kolmer-Wassermann determinations in these cases were negative.

The usual battery of liver function tests was performed on 16 (84 per cent) of the 19 patients, and in all instances there was evidence of hepatic dysfunction of varying degree. The most commonly abnormal tests were the cephalin flocculation, thymol turbidity and the cholesterol/cholesterol ester ratio. Seven of the 12 patients tested showed significant retention of the bromsulfalein dye in 45 minutes. There was no clinical jaundice, but laboratory evidence of jaundice as measured by the serum bilirubin was present in two cases.

An interesting and important finding, though entirely unrelated to the malaria, was the incidence of helminthic infestation. Stool examinations were done in 16 patients and seven (44 per cent) had positive evidence of infestation (ova or the adult worm). All cases had *Ascaris lumbricoides* ova; one case showed *Endamoeba histolytica* cysts and hookworm ova in addition to the *Ascaris*.

TREATMENT

In considering the treatment of malaria, "the most prevalent and most widespread of all human diseases,"³ a basic approach is extremely impor-

tant. A familiarity with the life cycle of the plasmodium organism is necessary. Because of the mosquito vector, control of this insect through destruction of breeding areas and extermination of the larva and adult arthropods is vital in endemic areas. Because the human host serves as a reservoir from which the mosquito can become infected, persons with the infection should be treated and noninfected individuals treated prophylactically.

Different drugs affect the plasmodium at various phases of its life cycle. Coggeshall⁴ suggests the following classification of therapy:

1. Causal prophylaxis: Destruction of the sporozoites injected by the mosquito before infection is initiated.
2. Suppressive therapy: Administration of the drug to prevent the development of a clinical attack without destruction of the infection.
3. Treatment of the acute attack.
4. Curative therapy.

To date, there does not exist a tested prophylactic drug of low toxicity.

Quinine, quinidine (Atabrine), chloroquin (Aralan) and camoquin are all suppressors. Suppressive therapy (chloroquin) is in use by the United Nations' Forces in Korea.¹ Of these drugs, chloroquin and camoquin are the drugs of choice. Chloroquin and camoquin are drugs developed under the sponsorship of the National Research Council during World War II.⁵ These drugs belong to the four amino-quinoline group of compounds which were synthesized by German research workers in 1934, and patented by them in 1939.⁶ Chloroquin is a rapid acting drug with low toxicity which affects the asexual stage of the malarial parasite in the human body and is probably the most potent schizontocide yet discovered.⁷ It has no effect on the exo-erythrocytic phases; hence, it will not prevent relapses.⁸ It is rapidly absorbed from the gastro-intestinal tract. It requires only weekly dosage for suppression. In *falciparum malaria*, it is curative because of the almost certain absence of exo-erythrocytic forms.⁹ Camoquin is less toxic than chloroquin, and therapy for an acute attack may be given in a single dose.

In the group of eight amino-quinoline compounds, pamaquin (Plasmochin) and pentaquine are the best known. Pamaquin is quite toxic and its use was discontinued by the armed services during World War II. Pentaquine and iso-pentaquine are less toxic than pamaquin¹⁰ and are effective against the exo-erythrocytic stage of the life cycle. This places these drugs in the curative class. Toxic manifestations of methemoglobinemia, gastro-intestinal symptoms and hemolytic anemia do occur, and hospital observation is necessary when these drugs are used.

Dosage:

Chloroquin diphosphate¹¹

Acute attack: 1.0 Gm. followed by 0.5 Gm. in six hours. Then 0.5 Gm. daily for two days. (Total 2.5 Gm.). 0.5 Gm. daily may

be continued for five days but this is not necessary.

Suppressive: 0.5 Gm. once a week.

Camoquin¹²

Acute attack: 10 mg./Kg. in one dose.

Pentaquine and iso-pentaquine:¹³

60 mg. daily for 14 days (divided into three doses a day) with two Gm. of quinine daily, also in three divided doses.

To alleviate toxic symptoms, Coggeshall¹⁰ recommends 30 mg. daily for 14 days with 0.6 Gm. quinine three times a day.

THERAPY IN OUR PATIENTS

All our patients were treated after a positive smear was reported by the Department of Bacteriology, after a stool specimen was obtained and after a battery of liver function tests was done. Each patient received chloroquin 1.0 Gm. followed by 0.5 Gm. daily for four days. Pentaquin and iso-pentaquin were not used because they were not available. In all instances, there was relief of symptoms in 24 to 36 hours. There were no symptoms of toxicity to the drug. All cases were treated with bed rest, until the chloroquin was given. Patients with hepatitis were placed on a high-protein, high-caloric diet with supplementary vitamins and kept at bed rest until liver function tests showed improvement. Helminthic infestations were treated when diagnosed.

DISCUSSION

As a result of the recent conflict in the Orient, malaria is again being seen in nonendemic regions in America. Therefore it is important for the practicing physician to be cognizant of the disease and familiar with the most modern therapeutic measures. Because of the complication of liver damage and the coexistence of helminthic infestation in a large percentage of our patients, we think it necessary that all patients with malaria from Korea be hospitalized for a careful diagnostic survey before therapy is initiated. The diagnostic work-up should include a thick blood smear or smears for malaria, a battery of liver function tests, and the study of at least three daily stools for ova and parasites. (The zinc sulfate flotation method and the sedimentation method should both be used in the examination of the stool specimens.) If helminths are found, they should be treated concurrently. If the patient shows evidence of malarial hepatitis, he should be at rest and placed on a high-protein, high-carbohydrate, high-vitamin diet until the liver function tests have returned to normal or near normal.

As previously stated, the treatment of choice at the present is suppression in an endemic area with chloroquin or camoquin, and curative therapy in a nonendemic area using pentaquin or iso-pentaquin in conjunction with quinine.

SUMMARY

1. Nineteen cases of malaria, all referable to Korea, have been presented.

2. All cases had a positive blood smear for *Plasmodium vivax* and one case had a coexisting *Plasmodium malariae* infection.

3. The majority of the patients had evidence of malarial hepatitis.

4. A large percentage had coexisting helminthic infestation.

5. Modern therapeutic measures were discussed.

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CLINICOPATHOLOGIC CONFERENCE

January 17, 1951

SUMMARY OF CLINICAL RECORD

THE PATIENT UNDER consideration was an infant whose mother was a 25 year old primigravida. On physical examination the mother was well-developed and well-nourished. Head and neck examination was negative. Heart was not enlarged, rate and rhythm were regular, blood pressure 110/70. The chest was normal to percussion and auscultation, the abdomen was flat, no masses or solid organs were palpable. The extremities were negative. Pelvic measurements were as follows: Intraspinous 25 cm., intercrystal 27 cm., ext. conjugate 19 cm., the diagonal conjugate was not reached at 11 cm., bisischial 9½ cm., ant. sagittal 6 cm., post. sagittal 8 cm. and antero-posterior 12 cm.

The pelvic findings revealed a marital outlet, the cervix was nulliparous, soft and blue. The uterus was retroverted, soft, two-and-a-half times its normal size, regular and freely movable. There were no adnexal masses. Routine urinalysis was entirely normal and the blood hemoglobin level, red and white blood cell counts and the peripheral blood smear were within normal limits. The Wassermann reaction was negative. The blood

was type O Rh positive. The prenatal course was uneventful. The weight gain was from 125 pounds to 137 pounds, blood pressure varied between 110/70 to 120/80.

The mother was electively induced approximately 17 days beyond the expected date of delivery. The induction was started at 0700 with castor oil followed by an enema; at 0950 the membranes were ruptured artificially. The fetus was in L.O.T. position and the fetal heart was heard in the left flank. The cervix was thin and two cm. dilated with the presenting part of the ischial spines. Pituitrin injections were started at 0900 beginning with 0.05 cc. and increased 0.05 cc. in strength approximately every 30 minutes. At 1330 when 0.42 cc. had been administered, there were no apparent uterine contractions. A repeat course of pituitrin was started and at 1700 the patient received 0.36 cc. At this time uterine contractions were noted becoming regular and effective. At 1855 the contractions caused considerable discomfort and morphine sulfate 8.0 mg. and scopolamine 0.6 mg. were administered intravenously. This provided fairly adequate analgesia. At 1940 scopolamine 0.6 mg. was given intravenously because of increasing discomfort. By 1935 the cervix was 8 cm. dilated and the fetal position was L.O.A. with the head below the spines; the fetal heart was heard in the L.L.Q. Ten minutes later the cervix was completely dilated, and she was permitted to push with her contractions. At this time 600,000 units of repository penicillin was injected intramuscularly. At 2000 the head was crowning, the fetal heart beat was regular and of normal rate. The mother was prepared and draped in the normal manner. Spontaneous delivery was easily accomplished after performance of a left mediolateral episiotomy. An inhalation anesthetic of cyclopropane was administered for 15 minutes. The placenta was expressed spontaneously and the blood loss was 275 cc.

The patient was a male weighing 3,735 grams at birth. He cried spontaneously and no resuscitation procedures were required. Examination at the time of birth revealed what appeared to be a healthy newborn infant without gross congenital defects. There was considerable moulding of the parietal bones, the fontanels were both open and normal. The baby's color was red, the child was breathing regularly and cried when stimulated. Abdominal examination revealed no masses or solid organs. The infant was identified, the cord was clamped, the silver nitrate drops were instilled in the eyes.

The baby was admitted to the nursery at 2030 in good condition with a rectal temperature of 98° F. At 2200 the nurse observed that the baby had a very weak cry. At 2400 the rectal temperature was 95.8° F. The nurse noted, "The baby feels cold, cries weakly, was wrapped well." At 0055 the infant was cold and his skin had a bluish-purple color. The nasopharynx was aspirated

and attempts were made to stimulate him with warm water. The baby was pronounced dead at 0115.

Abstracted by Dr. William C. Keettel, Jr.

CLINICAL DISCUSSION

Dr. W. C. Keettel, Obstetrics & Gynecology: This is a problem of a primiparous patient who was delivered in this hospital several years ago. This 25 year old patient had just missed her second period when first seen. A complete examination was done, consisting of a physical examination, pelvic examination, pelvic mensuration, urinalysis, complete blood count, serology, Rh typing and blood grouping. Everything seemed normal and she seemed to be starting on an uneventful pregnancy. The prenatal care was adequate, being seen once a month until the seventh month, then every two weeks and finally every week. The course was uneventful, the weight gain being 11 pounds, the blood pressure readings were within normal range. She worked throughout the pregnancy and one could not have asked for a more normal gestation.

The pregnancy continued 17 days beyond her expected date, causing considerable apprehension and anxiety. On several occasions, induction of labor was requested. It was pointed out by her physician that it probably was not advisable to terminate the labor, but as is so often the case with women, she had her own way and labor was induced.

Castor oil and an enema were given, and then fractional doses of pitocin were started. During the first course of injection of pitocin, the patient was taken to the delivery room, the operator scrubbed and a sterile pelvic examination was done. This revealed the cervix to be effaced and partially dilated. The head was at the spine in the OT position, the fetal heart was normal; so the membranes were ruptured artificially. Following this no uterine contractions developed, so a second course of pitocin was given. Finally after four or five injections, regular uterine contractions developed and the labor progressed normally. No tetanic contractions were observed, the cervix dilated, the presenting part descended and rotated and dilatation was complete in ten hours after the induction of labor and rupture of the membranes. During the last part of the first stage of labor, the patient became uncomfortable and requested sedation. Morphine and scopolamine were given intravenously when the cervix was eight cm. dilated. The pains became so tumultuous and painful that the scopolamine was repeated. Delivery occurred one hour following the administration of the intravenous medication. The delivery was normal and spontaneous, there was an episiotomy, minimal blood loss, cyclopropane anesthesia.

The baby was normal at birth. It cried immediately and the examination at that time revealed no gross congenital anomalies. It appeared

to be a healthy child and the routine care was given. The husband saw the child and was told it was perfectly normal. In the next 30 minutes the child was taken to the nursery. In the nursery the child was observed by the nurses. However, about an hour later they noticed the child had a feeble cry, but its color appeared satisfactory. It was wrapped more tightly because they thought it was cold. It was observed a little later and found to still be cold, the temperature was 95°, but they were not sufficiently alarmed to request medical attention. Four hours following delivery, the child was blue, cyanotic and not responding. Aspiration of the nasopharynx was done, and the baby was warmed with water. They immediately called for medical assistance. By the time the doctor arrived, the child was pronounced dead.

This represents a normal pregnancy without any complications, a normal delivery, a normal newborn child, full term, found dead four hours following delivery.

Mr. Carter, will you tell us the student's opinion and their impression?

Mr. William Carter, Junior Student: The majority of the students thought the primary diagnosis was an intracranial hemorrhage, more specifically to be subtentorial and others thought that it was probably the vein of Galen. Other possible diagnoses considered were congenital anomaly of the heart formation, pulmonary atresia and transposition of the greater vessels. There was also some discussion of the possible effects of the drugs on the baby, apnea neonatorum, congenital atelectasis, mucus plug, aspirated with atelectasis as a result, aspiration pneumonia and intra-abdominal hemorrhage, possibly of the adrenal cortex.

The majority felt the cause of death was on the basis of respiratory failure of central origin, probably hemorrhage near or in the vicinity of vital centers. A few thought it was on a peripheral basis with atelectasis. Also considered were septicemia and loss of blood with possible shock.

Dr. Keettel: From the obstetric standpoint, there are several points that should be emphasized. One is concerning the onset of respiration in the newborn. The older concept concerning the inauguration of respiration is this: A child in utero was apneic and the lungs were unexpanded. At birth respiration started, the lungs expanded and the alveoli were opened. The child then started breathing regularly. If something happened producing anoxia during this intrauterine existence, the child would make attempts to breathe and material would be aspirated into the lungs. That was felt to occur rather frequently during the second stage of labor. Aspiration phenomena such as pneumonia or atelectasis would then result.

More recent information would seem to indicate that this is not true. I think almost every-

one now feels that the child starts breathing about the eleventh or twelfth week and breathes normally in the uterus. There is a transfer of amniotic fluid back and forth, the lungs are expanded and are actually functioning during this intrauterine existence. With birth, air is merely substituted for the amniotic fluid, and there is further expansion of the lungs and normal respiration continues. Therefore, extrauterine respiration is not suddenly inaugurated with delivery, but has been present during the development of the child.

The causes of death that one must consider in this case are intracranial hemorrhage, the effects of excessive sedation, atelectasis, pneumonia and congenital heart lesions.

If there is severe intracranial hemorrhage or excessive amounts of an analgesic agent has been given, this may certainly effect the respiratory centers so that the child does not respire normally. While in utero the child may breathe normally as long as it is getting maternal oxygen, even though there may be atelectasis, congenital heart lesions or pneumonia, but once delivery has occurred and the child tries to get the oxygen from the inspired air, it often has serious trouble.

Intracranial hemorrhage must also be considered as it is the most important cause of death during the first 24 hours. Since this patient received pitocin, it may be that she had tetanic contractions that were not recognized and the child had a forceful delivery. There was no note of this fact, but the last hour of labor was more forceful than anticipated. It also should be emphasized that intracranial hemorrhage can occur with spontaneous delivery. Against the diagnosis of intracranial hemorrhage would be the fact that the child was normal at birth. Almost every child that has sufficient intracranial damage to die within the first 24 hours will be anoxic at birth and there would be difficulty in inaugurating respiration.

One must also consider whether the mother received excessive amounts of analgesic agents and anesthesia. I think there is no question that the morphine and scopolamine were given probably a little late. The baby was probably delivered at the height of the therapeutic effect of the drug so one would wonder if that might have been a factor. However, this child showed no evidence of anoxia at birth and cried spontaneously.

I would like to just mention a word about intrauterine infection. With this newer concept of respiration, it seems reasonable that, if the amniotic cavity becomes infected, there would be an excellent opportunity for the development of lung infections in utero. It may be a rather common phenomena, and we assume that it is. The amniotic fluid is sterile in the early part of labor, regardless of whether the membranes are ruptured or not. As labor progresses, within about six hours, organisms are always found in

the uterine cavity. As labor progresses, the contamination increases. Therefore, we feel that these intrauterine infections are more common in prolonged labor, and where there has been operative intervention or difficult delivery. Occasionally it may be seen with spontaneous, uncomplicated deliveries. These babies suffering from an intrauterine pneumonia as a rule are stillborn or die during the second stage of labor. Others die between the second and fifth day. As a rule they do not die within the first 24 hours.

Dr. Boyd will discuss the pediatric aspects of this case.

Dr. Julian D. Boyd, Pediatrics: I would like to review with you a few points from the protocol. This baby was born at 8 o'clock and in the nursery at 8:30. At the time he was examined before going to the nursery, the temperature was 98°. His temperature must have been at least as great as the mother's body at the time of birth. The baby cried spontaneously, no resuscitative measures were needed. It apparently was normal at birth. There was considerable moulding of the head, but one can expect that when the baby weighs over eight pounds. That is not necessarily anything we need to have any concern about. The color was said to be red, the respiration was regular and the baby cried when stimulated. I think that is an important point for us to keep in mind. When it was admitted to the nursery, its condition apparently was good. One and one-half hours later, its cry was noted to be weak. Three and a half hours later its temperature was less than 96°. Here is a baby that was well bundled, whose temperature dropped 2° in the course of three and a half hours. If it had not been producing any heat at all, what might we expect its temperature to be at the end of that time? I do not know, but at any rate it seems this baby's temperature may have been falling for a longer period of time than is obvious from the record. Four and a half hours after coming to the nursery, or less than five hours after birth, the color was pronounced bluish-purple and the skin cold. The record sounded like a moribund baby. It was pronounced dead less than five hours after it was born.

When did it die? Death does not occur all at once; we die by fragments. I am wondering if this baby may not have been dying for a long period of time before death actually was recognized. Possibly the infant had become progressively more moribund from the time it left the delivery room.

There are several conditions relating to respiratory function which are reported among causes of neonatal death. Of these, first let us consider primary atelectasis. All babies are atelectatic at birth; even though some areas may show the presence of amniotic fluid inhaled during gestation or during the process of birth, the lungs are non-aerated until the infant draws his first breaths. With unobstructed airways, one may ex-

pect the establishment of adequate aeration potential as soon as the infant has breathed enough to cry lustily. According to the protocol of the infant we are discussing, the baby was breathing regularly after birth and did cry when stimulated. This may be interpreted as evidence of functional adequacy of lung expansion, even though it does not imply that the lungs had become fully expanded. It is well known that some degree of atelectasis is to be expected in the normal infant for as long as two or three weeks after birth.

Apnea neonatorum is offered too as a cause for neonatal death. The infants first breath comes as a reflex response to the shock from sensory stimuli which greet the infant as it emerges from the birth canal. This first breath is followed by further respirations of the normal pattern of regularity and of depth. If for any reason an infant is not responsive to sensory impulses, then chemical changes will tend to initiate respiration. The resultant respirations are not rhythmic; they are disintegrated and gasping in nature. Yet they may permit the uptake of oxygen in amount sufficient to bring about the establishment of the normal respiratory rhythm. Only if an infant's central nervous system is depressed through anesthesia, drugs or anoxia would one expect respirations once established to cease because of initial apnea. An infant with apnea initially may appear normal otherwise, it may have good muscle tone and the respirations may seem ample even though irregular. The pulse of such an infant may be good, but usually it is slower in rate than one would expect.

During recent years, pathologists have become aware of the occurrence of a hyaline type of deposit or membrane which can be demonstrated occasionally in the lungs of infants who were born alive, but who died during the neonatal period. It is recognized that the presence of such a membrane would interfere with gas transfer in the alveoli, and thus might lead to death. Origin of the membranous deposit has been variously ascribed to vernix, to inspissated amniotic fluid and to infectious processes. The opinion has been expressed that these membranes may be a local expression of fetal disease which leads more often than not to premature birth, and that the presence of the membrane thus may only be one of the causes of death of such infants. The hyaline membrane is found more frequently among infants born before term than among those born at term. The infant whose record we are studying was not born prematurely, it was large at birth. Nevertheless, if a hyaline membrane was present, it might have caused or contributed to the causes of death.

Pneumonia of the newborn, as the term commonly is used, is not a clinical or pathological entity. One should distinguish between infectious and non-infectious forms. Amniotic fluid inhaled prior to birth is non-irritating. Evidently such residual fluid is absorbed quickly through the

alveolar epithelium soon after the lung has expanded, without causing structural or functional disturbance. The inhalation of infected amniotic fluid, on the other hand, might easily occur prior to birth when the amniotic sac has been ruptured several hours before the infant is born. With anoxia, the fetus will make respiratory movements while being born, and thus could infect its lungs. With a virulent organism, one can picture the rapid development and spread of generalized pneumonitis which could result in death within a short time. Whether it could cause as fulminating pattern of dissolution as this baby presented may be open to question.

From the conditions listed in the protocol, we might postulate that this infant had some degree of anoxia before birth; that it inhaled amniotic fluid which had had opportunity to become infected with pathogenic organisms; that its first breaths were in response to its apneic state rather than to the usual peripheral stimuli. If these events had occurred either singly or in combination, one would have reasons sufficient to explain the pattern of response which the infant followed. Recognizing the possibility of each of these factors I have mentioned, may we ask ourselves whether anything might have been done post-natally which could have prevented the fatal outcome?

Dr. Keettel: Dr. Stamler, would you tell us what was found at autopsy and comment on the hyaline membrane?

Dr. Frederic W. Stamler, Pathology: (SUMMARY OF NECROPSY FINDINGS) Both lungs were dark, solid and almost completely noncrepitant. They sank readily in water and no air could be expressed from the submerged lungs. Microscopic examination disclosed an early diffuse pneumonic process involving both lungs. No evidence of intracranial hemorrhage, other type of birth injury or congenital defect was found. Death was due to pneumonia. Lung tissue was not cultured and post-mortem cultures grew Diphtheroid and Achromogenic gram-negative rod organisms which probably were not of significance with respect to the pulmonary infection.

NECROPSY DIAGNOSES

Pneumonia of the newborn.

Fetal pulmonary atelectasis, partial, bilateral.

Asphyxial type hemorrhage of heart, lungs and adrenals.

Visceral congestion.

In view of the history and short duration, it is impossible to say when the infection was initiated. Unfortunately the lung tissue was not cultured. It is extremely difficult to differentiate between simple atelectasis in the newborn and atelectasis complicated by pneumonia. The pneumonia was not recognized until microscopic examination. Consequently no cultures of the lung tissues were taken.

Both lungs were involved in a comparable

fashion. The small bronchi had considerable acute inflammatory exudate within the bronchial lumens. The adjacent lung tissue was hyperemic, congested, the alveoli were filled with fluid and exudate. In many areas many inflammatory cells were found within the alveolar spaces and within the interstitial tissues of the lungs.

We have a demonstration of rather diffuse acute pneumonic involvement of both lungs.



FIGURE 1. Fluid and cellular exudate in bronchus and alveoli.

Whether this was superimposed upon some other condition may be a matter of debate. There was considerable fluid and amorphous protein material within the lungs. Small amounts of amniotic debris could be demonstrated and there were areas of atelectasis. Whether the pneumonia was secondary to these other processes or exactly what its pathogenesis was, cannot be stated definitely.

Here are photomicrographs from another autopsy which show so-called hyaline membrane disease of the newborn with the large masses of pink-staining material which in this case occlude the terminal bronchioles and extend out into the atria and the alveoli of the air spaces. This child was a term infant, born by caesarian section. It was an elective section because the mother had had three previous sections. There was no indication of any abnormal conditions being present. Everything went smoothly, the child was essentially normal at birth, but a few hours later became very cyanotic and died about eight hours after birth with membranous lesions of the terminal bronchioles and the respiratory air spaces of the lungs as the significant lesions found at necropsy.

There was practically no inflammatory reaction in the lung. It was considered that the membranes represented accumulations of amniotic debris formed into membranes of this sort by the action of the air passing through the bronchioles, especially with dyspneic efforts of breathing associated with asphyxia. You can find remnants

of cornified epithelium in this material and other evidence that it is amniotic debris. There are many cases in which large amounts of amniotic debris are present without formation of such membranes. For this and other reasons, certain investigators have postulated this may represent rather some metabolic disturbance of the lung or something other than aspiration of amniotic fluid. I think that this point has not been settled conclusively.

Dr. Eugene F. Van Epps, Radiology: It has been demonstrated that a child in utero breathes. After injection of thorastin into the amnion, it can be demonstrated in the lungs and within the gastrointestinal tract of a child in a matter of a few hours. Second, any individual who says that a child has an intracranial hemorrhage should not imply that it was a mismanaged labor. It occurs in individuals who are managed very well. The implications of obstetrical trauma that could have been prevented should never occur. Third, the cause of sudden death not mentioned here is a hernia through the foramen of Bochdalek, i.e., the intestinal tract will herniate through the posterior pleuraparietal foramina and extend into the thorax and be the cause of sudden death. We have had several of those and one must consider that as a possibility.

Dr. William B. Bean, Medicine: Is this situation more apt to occur in labor induced than in spontaneous deliveries?

Dr. Keettel: We have probably had more experience than any one else in the country with

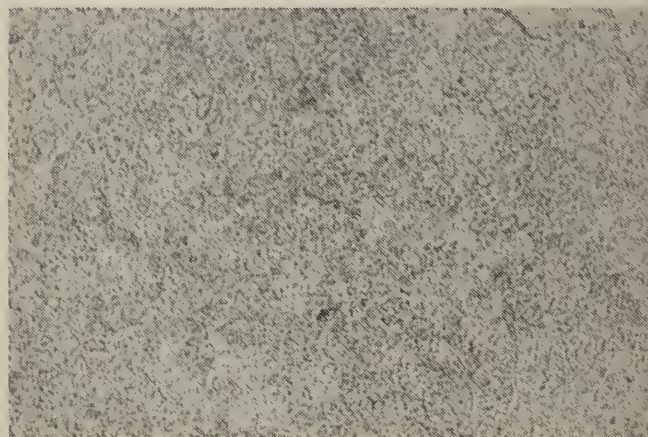


FIGURE 2. Diffuse pneumonic involvement of poorly expanded lung tissue.

induced labor because of the type of obstetric material that we have. Several years ago we compared the labors of 1,000 women who went into labor spontaneously with 1,000 who were induced electively. We found that the fetal mortality was the same. There was no evidence that in induced labors the incidence of intrauterine infection was increased, the incidence of intrapartum fever and post-partum infections being the same. We concluded that premature artificial rupture of the membranes does not significantly

alter the birth process or affect the prognosis for the mother or her child. It should also be pointed out that the prophylactic administration of penicillin during labor will prevent many of these intrauterine infections from developing. I am glad Dr. Bean asked this question.

Dr. Boyd has asked a provocative question as to whether this is a preventable death. I think it does bring to mind whether this labor should have been induced and whether this was a factor in the introduction of infection. Our feeling is that elective induction of labor should not be done unless there is a valid indication; this was a questionable indication.

The last point I would like to mention is this matter of sudden deaths in the nursery. These babies have been sick for some time, but we have not recognized it. As Dr. Boyd rather aptly put it, these babies are dying by degrees, but no one recognizes it. So often it is assumed that these sudden deaths are due to aspiration. I think these babies have been sick for varying periods of time, but it is difficult to determine whether a newborn child is ill. Even with a severe infection the temperature is not elevated or there is no change in white count. The only change may be that it does not nurse well. Many times it is the mother who first notes that the child is not doing well. It behooves the physician to pay attention to these maternal apprehensions as so often they are justified.

In summary, this is a case of fetal death four hours following delivery due to an extensive pneumonic process that must have developed in utero. The portal of entry for the organism must have been at the time of artificial rupture of the membranes or soon after that time. It is unusual for such an infection to develop, particularly in a short labor and latent period. It would appear from the fetal standpoint this was a fulminating infection. However, from the maternal standpoint this was not borne out since the puerperium was afebrile.

OMAHA MID-WEST CLINICAL SOCIETY MEETING

The nineteenth Annual Assembly of the Omaha Mid-West Clinical Society will be held October 29 to November 2 at the Hotel Paxton in Omaha, Nebr. Eminent speakers will address the assembly and conduct clinics and question and answer periods; members of the Society will present lectures, panel discussions and scientific exhibits. For further information write to the Executive Office of the Society, 1031 Medical Arts Building, Omaha, Nebr.

CITES DANGERS OF SOCIALIZED MEDICINE*

Real Issue: Political Versus Private Control

MOST REV. KARL J. ALTER,** ARCHBISHOP

CINCINNATI, OHIO

The recent press notices which implied in their headlines that the Holy See has put its stamp of approval on "Socialized Medicine" do not seem to be justified by a correct reading of the text itself.

Monsignor Montini, the Undersecretary of State for the Vatican, on the occasion of the recent annual meeting of the "Semaine Sociale" in France wrote a letter to Charles Flory, the president of the organization, in which he discussed the need and urgency of making health services available to the public. He spoke of the concern for placing within everybody's reach medical care of high standards; but nowhere did he mention that the State should supply this service directly under a nationalized, exclusive, and compulsory tax program.

In fact he warned against certain abuses of a moral nature which might creep into a State medical program. The newspaper headlines were misleading and the conclusion that the Church favored Socialized Medicine, as understood here, was quite unwarranted.

It will help to clarify the import of Monsignor Montini's discussion of this subject if the two following paragraphs taken from his letter are studied. They emphasize a definite but limited responsibility of the State to make provision for the public health. They also emphasize that the State's responsibility is to support and coordinate as needed the efforts of private enterprise. They recognize in addition that with the assistance of the State there will be more efficacious and more rapid action.

"Certainly there could be no question of contesting the rights and the duties of the state in the matter of public health and especially in favor of those who are less fortunate, of those whom poverty renders less provident and more exposed.

"A just legislation on hygiene, preventive medicine, and adequate and sanitary housing, the attempt to provide everyone with the best medical care, the elimination of social plagues such as tuberculosis or cancer, a legitimate preoccupation for the health of young generations and many other measures that encourage the health of the

* Permission for reprinting this article has been granted by the National Catholic Welfare Conference News Service and *The Witness*, a weekly newspaper published by the Archdiocese of Dubuque. It appeared in the August 16, 1951, issue of *The Witness*.

** Archbishop Alter is a former Director of the National Catholic School of Social Service, Washington, D. C.; was an original advocate of fact-finding boards for the settlement of labor disputes; has served as a committeeman or officer with the National Conference of Catholic Charities, the Ohio State Department of Welfare, the Social Service Federation, the Toledo Chapter of the American Red Cross, the Toledo Council of Social Agencies, the Toledo Community Chest, among other organizations. He is a former Episcopal Chairman of the Department of Social Action, National Catholic Welfare Conference.

body and spirit in the framework of wholesome social relations—all this cooperates toward the prosperity of a nation and its interior peace.

"However, in the framework of modern civilization only the state, supporting, coordinating, when needed, with private enterprises has its own means for 'a more universal, more concerted and consequently more efficacious and more rapid' action. (Address, June 27, 1949). But these achievements in the field of security, of medicine, of assistance ought to conform themselves to the moral principle of respect for men and for the family. Unfortunately, fear in this matter is not unwarranted."

The point at issue is not whether moral abuses can and do exist in the private practice of medicine or in the voluntary group-organization of health services, but whether these dangers are not greater (especially in view of our overwhelmingly secularist society if the State imposes a compulsory tax for a uniform health program on all the citizens.

There is always the remedy in private or voluntary programs of refusing financial and moral support as well as of voicing effective criticism. When the State undertakes to tax every citizen to support its own uniform program of public health, what redress do the citizens have against possible social birth control, euthanasia?

It can be readily admitted that this is not the immediate intent of the advocates of socialized medicine and that it is not the most disturbing feature of a nationalized health program. The fundamental issue is whether such a program would actually produce the net results which are so euphemistically described by its advocates.

The debate furthermore should not be joined on the question of whether there are health needs not now satisfied, nor on the catastrophic impact of prolonged and serious sickness on the family budget; nor even on the advantage and necessity of prepayment of medical and hospital costs. All these aspects of the problem are accepted without debate by social students.

The real issue is whether we can achieve a better result with a limited state program in conjunction with voluntary insurance and private initiative, or whether we must have a universal, compulsory tax-supported program under direct governmental control. The experience with the health services now being rendered by government on the local state, and national levels does not offer much encouragement to a further extension of government services in this field.

It is altogether exceptional to find the quality of medical and health service as high in the government-controlled institutions as in the equivalent institutions conducted under private or voluntary auspices.

A survey of county hospitals and the services made available for the medically indigent by city governments will convince any skeptic in the

premises. It has not been found possible to eliminate certain elements of partisan politics from the policies and management of these institutions and services. There is frequent bickering over budgets, appointments, and division of responsibility, with consequent deterioration of service, as anyone can testify who has had practical experience in the field of social work.

If we look we find greatly divided judgements on the success of nationalized health programs. The length of time during which Great Britain's program has been in effect does not permit as yet a decisive judgment. The medical men of England are not satisfied with the present setup, and are currently threatening to strike unless their fees are increased. This means of course increased taxes, in spite of the fact that the budget is already far in excess of anything originally contemplated.

Hospital facilities are declared to be utterly unequal to the demands, with the result that there are long delays in the admission of even urgent cases. More hospitals mean more expense, and of course more taxes. The argument is not that there should be no further development of facilities with more taxes, but that the rosy forecast of costs has proven to be extremely fallacious. Other forecasts may in the end be equally fallacious as to the future health standards of the entire nation under a nationalized system of health.

The first question which must be discussed in any sound public health program is whether the necessary facilities and personnel actually exist to warrant the promises made by the advocates of nationalized medicine in providing universal health services.

If adequate facilities and adequate personnel do not now exist then no program under any auspices can be a success. The fact is that, on the government's own admission, these essential requirements are not now available and cannot be made available for quite some years. It will take many years to train the necessary number of medical doctors and an equal number of years to train sufficient hospital administrators, nurses, and technicians, not to speak of the huge sum of money required to finance a building program of adequate dimensions. It seems utterly unfair, even if otherwise desirable, to start a universal tax collection before there can be a universal service program to meet the needs. This is only one objection among many others.

The advocates of a compromise program do not deny governmental responsibility for the health of the public; but they do object to the folly of getting the cart before the horse. Such is the case when the government promises health services for everybody in spite of the acknowledged fact that they are not yet universally available.

If the government would provide more grants in aid for the building of hospitals and medical schools and establish a form of subsidy for doctors and nurses in the sparsely settled areas with access

to health clinics to be developed in these rural areas, then it would be rendering a most constructive service to the nation.

Such a program is the real test of the sincerity of purpose on the part of government. If however the objective of the government program is to get control rather than help to extend health services, then of course a compulsory health tax and nationalized administration are necessary.

It will require all the resources which the federal budget can muster for many years to come, in order to meet the minimum health program. There is a great shortage of doctors, nurses, hospitals, clinics and other facilities, in spite of the fact that there is a higher ratio of these services in the U.S.A. than any other country of the world.

We need government aid to provide the additional services. We do not need control. The provision of hospital and medical care can well be left to voluntary efforts such as Blue Cross, Blue Shield, Farm Bureaus, and other forms of voluntary insurance programs. Anyone who sincerely wants health and hospital insurance can get it now at reasonable cost and at a figure which no government system could match. We say this because now we have available tens of millions of dollars of donated service which no government could ever command. The medically indigent are now and always will remain a direct charge on government.

There is a place for government in the health program of the nation; but it is not that of a dictator in an omniscient state. The principle of "subsidiarity of function" is absolutely valid in the premises. The supposition that hospitals and the medical profession would or could remain free and autonomous under any of the proposed nationalization schemes is a chimera and a mirage. The government contact would always be the controlling instrument; and the government contract would not be subject to collective bargaining, as anyone knows who has dealt with government agencies. One simply signs on the dotted line—or else.

There has been plenty of debate and argument on this question of "socialized medicine." The discussion most frequently starts from false premises. The thing is a misnomer. There must always be a social aspect to health and a social responsibility. The real issue is political control and nationalization versus private and voluntary control.

Government cannot be permitted to evade its share of responsibility; but government should not be permitted to assume the dominant responsibility. Let government help financially to support a program of universal health service, but let voluntary institutions and agencies provide the service. The area of chronic illness, the field of contagious disease, and the situation which requires the exercise of police powers belong to government. No one competent to judge will gainsay this proposition. The government cannot fulfill its own

particular responsibility without taxes, but let them be included in the regular budget without the pretense of a phony insurance system.

CITIZENS' CONFERENCE ON CHILDREN AND YOUTH

A state-wide citizens' Conference on Children and Youth will be held October 17 at the State House in Des Moines. All persons who are working with children in any capacity are invited to attend. Dr. Henry Helmholtz, Mayo Clinic, will speak following a dinner to be held at East High School. Dr. Helmholtz has for years been director of the Clinic's Pediatric Department and was Chief Consultant to the Midcentury Conference.

The surveys made by committees of the Iowa Commission on Children and Youth last year in preparation for the Midcentury White House Conference will be reviewed in the light of the White House findings. Governor Beardsley will address the conference.

Advance reservations may be made with Miss Esther Immer, Executive Secretary of the Iowa Commission on Children and Youth, Fourth Floor, State Office Building, Des Moines. Registration fee, for adults, is \$1.00, to help defray expenses. Price of the dinner is \$1.50 and advance reservations are required.

COURSE IN CHILD PSYCHIATRY

The University of Minnesota will present a continuation course in Child Psychiatry for general physicians and pediatricians November 26 to December 1 in Minneapolis. Dr. Reginald S. Lourie, Director of the Department of Psychiatry, Children's Hospital, Washington, D. C., and Dr. J. Franklin Robinson, Director of the Children's Service Center of Wyoming Valley, Wilkes-Barre, Pa., will be the visiting faculty members for the course. Dr. Reynold A. Jensen, Associate Professor, Departments of Psychiatry and Pediatrics, University of Minnesota, is chairman for the course.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 505 Bankers Trust Bldg., Des Moines 9, Iowa.

The JOURNAL *of the* Iowa State Medical Society

ISSUED MONTHLY

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Vol. XLI OCTOBER, 1951 No. 10

Honor Roll of Technical Exhibitors

In reviewing the list of firms that have exhibited at our annual meetings in the last 15 years, it is most gratifying to find many of them are consistent participants. Since the financial support of these firms provides the bulk of the funds for our annual sessions, the members of the State Society should know who they are. The relationship between the doctors and the technical exhibitors is a two-way street; the firms need the support of the medical profession and the State Society needs the support of the exhibitors.

Because we feel that the members of the State Society will wish to return the loyalty of these firms, we are enumerating them so that the list may be retained and filed.

THE ALL-STAR ROLL

(Every year)

MEAD JOHNSON AND COMPANY
MEDICAL PROTECTIVE COMPANY
PHYSICIANS & HOSPITALS SUPPLY
COMPANY
E. R. SQUIBB & SONS

HONOR ROLL

A. S. ALOE COMPANY—13 years
C. B. FLEET COMPANY—14 years
H. J. HEINZ COMPANY—11 years
HOLLAND-RANTOS COMPANY—13 years
LEDERLE LABORATORIES—14 years straight
ELI LILLY & COMPANY—13 years straight
V. MUELLER & COMPANY—13 years
NATIONAL DAIRY COUNCIL—12 years straight
PARKE, DAVIS & COMPANY—13 years straight
PET MILK COMPANY—11 years

PHILIP MORRIS & CO. LTD., INC.—14 years.
W. B. SAUNDERS COMPANY—14 years straight
STANDARD CHEMICAL COMPANY—14 years
SUTLIFF & CASE, INC.—11 years

POSSIBLE FUTURE ROLL

ORTHO PHARMACEUTICAL CORPORATION
—Every year since 1944

PICKER X-RAY CORPORATION—Every year
since 1945

PROFESSIONAL MANAGEMENT—IOWA—
Every year since 1945

G. D. SEARLE & CO.—Every year since 1945

SCHERING CORPORATION—Every year since
1944

Give these companies your special consideration.
They deserve it.

Community Chest

The month of October is Red Feather month, signaling the campaign to raise Community Chest funds. In Philadelphia on October 5, 1752, Benjamin Franklin laid the cornerstone of America's first hospital. Today that hospital benefits from Community Chest funds. October also includes YMCA Founder's Day (October 11), Girl Scout Week and Employ the Physically Handicapped Week all of these agencies benefiting from the Red Feather campaign.

The 1951 campaign will raise money not only for regular Community Chest budgets for local services but also for the new National United Defense Fund. This includes the USO and the United Community Defense Services which will add a goal of \$16,500,000 to the \$200,000,000 raised in 1950. More and more physicians are being called into the armed forces. Our contributions will provide important services for them and at the same time assist us at home by extending the activities of voluntary hospitals, clinics, nursing services and other health agencies for citizens in the lower income groups.

The medical profession has always advocated the extension of medical and health services by voluntary means. Private support will eliminate the hazard of governmental participation and control. This is another opportunity for doctors to make the Community Chest campaign a great success.

The Evaluation of the Electrocardiogram In Diagnosis and Prognosis

In order to clarify the present status of the electrocardiogram as a diagnostic aid, and feeling that nothing speaks as eloquently as a dollar and cents evaluation, we have written the medical directors of several large life insurance companies. We have asked them if they use the electrocardiogram in determining disability status and if they



require electrocardiograms of applicants for insurance. The replies have been convincing and show a marked unanimity of opinion and practice.

All of these large underwriters require an electrocardiogram of the applicants for the larger policies. One medical director states that "it is evident that action on a single case may pay many times over for the total annual expense of such diagnostic studies."

This medical director of one of our largest life insurance companies also says that in the relatively brief period in which electrocardiography has been employed in life insurance medicine it has abundantly proved not only its usefulness but often its indispensability. He cites the fact that coronary artery disease after the age of 40 may easily be missed on physical examination and more often than not can be detected only on the electrocardiogram.

A medical director of one of our Iowa companies replies thus, "It is true that our company requires as routine and mandatory electrocardiogram and X-rays for cardiac silhouette on larger amounts of insurance." They also reserve the right to call for these special studies on all cases including the determination of disability claims.

Particularly significant is the reply of another medical director in which he states that "for many years the company has required two complete physical examinations where the amount of insurance applied for exceeds \$30,000. We now feel that it is of more value to have one physical examination and an X-ray and E.K.G."

It is interesting to note that the effect of all this intensive electrocardiographic study is not altogether a screening process. A director of a large eastern company says that in his opinion the field of acceptability for insurance will be widened rather than narrowed by the electrocardiogram in cases of hypertension without cardiac hypertrophy or evidence of arteriosclerosis.

The electrocardiogram may be likened to the X-ray. It does not always show everything and sometimes more is read into it than is there. Yet the X-ray is a "must" both in compensation cases and in private practice. The E.K.G. is becoming quite as firmly established as an adjunct in diagnosis and prognosis. Insurance companies are positive of its value. What about our private patients? There are cases of arrhythmia that cannot be diagnosed accurately and positively without the E.K.G. A ventricular paroxysmal tachycardia might easily be mistaken on physical examination for an auricular fibrillation. Yet if such a mistake were made and an effort made at digitalization the results might be fatal as digitalis is strongly contraindicated in the former though it might be specified for auricular fibrillation.

In patients of middle age who suddenly show a glycosuria the E.K.G. is considered of as much value as the glucose tolerance test. Perhaps the glycosuria is the first indication of an hitherto unrecognized coronary disease.

Many times left ventricular hypertrophy is first recognized through the E.K.G. While there may be silent coronaries that do not at once manifest themselves in the E.K.G., there are perhaps more cases of coronary occlusion that are diagnosed only after the tracing is taken.

The relative importance or insignificance of premature beats can often be judged by several factors of the electrocardiogram. A study of 1,142 insurance applicants with extra systoles showed that 58 per cent showed no objective evidence of heart disease. The E.K.G. helped weed out the 32 per cent who really did have cardiac pathology.

Electrocardiography is now a part of our medical curriculum. Recent graduates have had access to it. Those of us who have been longer in practice and to whom electrocardiography has been Greek, are having increasing opportunities of taking short courses at the larger universities which teach interpretation of perhaps 90 per cent of E.K.G.'s. Excellent books are available and there are always cardiologists and clinics to which the more puzzling patterns may be referred for interpretation. No one is as well-qualified to make an accurate diagnosis as the physician who sees the patient and who, in the light of history and physical findings, can interpret the electrocardiogram as it is taken.

Employment of the Handicapped

Doctors are called upon daily to treat a myriad of patients who are the victims of accidental injury. Once the patient has been discharged from further medical care we often overlook the industrial prospects of the handicapped victim. Few jobs in any shop, office or factory require absolute physical perfection. Handicapped individuals can be employed in most jobs.

Two nation-wide surveys of the work performance of the physically handicapped, in industries both light and heavy, assure us that the handicapped, when properly placed, generally make good. They are excellent producers. They are safe workers. They stay on the job.

Excellent rehabilitation services are available, interested only in the best way in which qualified physically impaired workers may find employment in their highest levels of skill.

Special attention is being given through a National Employ the Physically Handicapped Week, October 7 to 13. To fail to employ the physically handicapped in jobs for which they are qualified is irrational. We cannot afford, in this era of national emergency, to waste our manpower.

NORTH CENTRAL CONFERENCE

The North Central Conference will meet November 11 at the Hotel Radisson in Minneapolis. Program for the conference will be announced at a later date in the *Journal*.

President's Page

New Year's Day is the customary day for making resolutions. These are usually instigated by remorse or the realization of habit of procrastination or just plain indifference. These same factors can be leveled at us as physicians when we look in the mirror of our activities of the past year. The summer has ended and we should be in physical glow for the months ahead. To that end then, resolutions are in order for us at this time.

Let us resolve to make attendance at medical meetings a "must" for the ensuing year. The county meetings insure personal representation within organized medicine; they usually have worthwhile scientific topics; they always have good fellowship wherein one can frequently solve little differences which may arise during the month. The hospital staff meetings offer a reciprocal opportunity to both you and the institutions in which you work. The various sectional and national meetings are always inspiring because of personalities whom you meet and material which you assimilate. It is refreshing to see others' problems.

Lastly, though it is still early, mark your calendar for the annual State Meeting in Des Moines on April 28-30, 1952. We can guarantee an excellent program.

So now—let's start this month with, I resolve

A handwritten signature in dark ink, appearing to read "Donald H. Young". The signature is stylized with a large, looped initial "D" and a long, sweeping underline that extends to the right.

President

POLK COUNTY MEDICAL SOCIETY CENTENNIAL

The Polk County Medical Society extends an invitation to all members of the Iowa State Medical Society to attend and participate in its Centennial Day Program, Wednesday, October 24, 1951, at the Hotel Savery in Des Moines.

PROGRAM FOR THE DAY

- 12:00 Luncheon \$1.75
"Tell Me Quick and Tell Me True"
Mr. Arthur H. Brayton, Secretary
Des Moines Convention Bureau
- 2:30 "This Is An Acute Abdomen"
Carl A. Moyer, M. D., Professor of Surgery
Washington University School of Medicine
- 3:30 "Recent Advances in our Knowledge of the
Anemias"
Carl V. Moore, M.D., Professor of Medicine
Washington University School of Medicine
- 5:00 Social Hour for Doctors and Their Ladies
- 6:30 Banquet \$3.00
(For Doctors and Their Ladies by Reservation
Only)
- 8:00 "Medical Pioneers of Polk County"
Walter L. Bierring, M.D., Des Moines
- 8:30 Centennial Address
George F. Lull, M.D., Secretary and
General Manager
American Medical Association

GENERAL INFORMATION

Although the evening meetings are informal, dinner dress is optional.

We hope that as many of our friends throughout the state as can will plan to assist us in the commemoration of a century of service on October 24.

You will appreciate how imperative it is that reservations be made well in advance of that date. For your convenience a reservation form appears below. If, after making reservations, you are unable to attend and cancellation is made in sufficient time, ticket prices will be refunded.

To the Polk County Medical Society, 721 Bankers Trust Building, Des Moines 9

I expect to celebrate with you on your Centennial Day. Please make the following reservations for me:

		How Many
Luncheon for Doctors Only	\$1.50	()
Social Hour for Doctors and Their Ladies		()
Banquet for Doctors and Their Ladies	\$3.00	()
Check for \$———— enclosed.		

Name	Address
------	---------

437

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. HOWARD W. SMITH, Woodward

President-Elect—MRS. J. DONALD HENNESSY, 205 Frank St., Council Bluffs

Secretary—MRS. CHARLES F. LOWRY, 246 Lincoln, Council Bluffs

Treasurer—MRS. DWIGHT C. WIRTZ, 449-56th St., Des Moines

PROGRAM COMMITTEE

The program committee of the Woman's Auxiliary, in a recent meeting in Des Moines, felt that one of the ways in which county auxiliaries can be of special assistance to their home communities is in the field of rural health.

In 1950, for the first time, the Extension Service of Iowa State College added a health specialist, Mr. M. I. Whorlow, to its staff. It is only right that a great agricultural state, such as ours, that has long recognized the importance of proper nutrition and adequate immunization for its valuable live stock should, at last, realize the necessity for as comprehensive a health program for its equally valuable citizens.

Mr. Whorlow wishes to assist county auxiliaries in their health education programs. He is available as a speaker to all auxiliaries, without charge, with, of course, the provision that where considerable driving is involved several groups combine their meetings to give him a larger audience with less mileage. His address is: Mr. M. I. Whorlow, 303 Morrill Hall, Iowa State College, Ames.

A group consisting of Mrs. Howard W. Smith, Woodward, Auxiliary President, Dr. Ben T. Whitaker, President-Elect of the State Medical Society, and Mrs. Wallace H. Longworth, both of Boone, met with Mr. Whorlow in Boone August 9 to discuss the subject of rural health and formulate some suggestions for the use of county auxiliaries.

The following list includes the major divisions of the subject as suggested by this group:

1. Rural sanitation.
 - a. Source of water supplies.
 - b. Sewage disposal and fly and rat control.
 2. Dental care of rural people.
 3. Pasteurization of milk.
 4. Immunization program, especially among pre-school rural children and students in rural and consolidated schools.
 5. Proper nutrition.
 6. Rabies control.
 7. Brucellosis control (Iowa has the dubious distinction of ranking highest in the nation in percentage of incidence of this disease).
 8. Farm accidents.
 9. Hospital facilities.
- Material on these and related topics may be

obtained, without charge, from the State Department of Health or from the Extension Service of each county.

It was suggested that each county auxiliary meet with the women who are county and township Health Chairmen of their local Farm Bureau. Names of these women may be obtained from the County Extension office. Such a meeting could be of great mutual benefit in improving the rural health conditions of a community.

MRS. WALLACE H. LONGWORTH,
Member of Program Committee

CONTEST TIME AGAIN.

The American Medical Association announces another Subscription Contest for the Woman's Auxiliary which began September 1, 1951 which will close on January 31, 1952. Cash prizes totaling \$400.00 will be awarded to the Auxiliary groups securing the largest number of subscription credits to *Today's Health* during the contest period.

Participation will be divided into groups as follows:

Group 1—Auxiliaries with a membership of 1 to 18.

Group 2—Auxiliaries with a membership of 19 to 35.

Group 3—Auxiliaries with a membership of 36 to 99.

Group 4—Auxiliaries with a membership of 100 or over.

The \$400.00 will be divided into cash prizes for each group as follows:

First prize	\$40.00
Second prize	\$25.00
Third prize	\$15.00

Prizes are based on your group quota and the number of subscription credits obtained. Your quota is the number of members in your auxiliary who have paid their Auxiliary Membership Dues at the close of your previous fiscal year. This arrangement gives the auxiliary with a small membership an equal chance with the larger ones in their particular group. For example, an auxiliary that has 20 members and secures 20 subscriptions would have reached its quota and have a rating of 100 per cent. Further, if an auxiliary has only 20 members and secures 80

subscriptions, it would have a rating of 400 per cent and win over an auxiliary that has 30 members and secures 90 subscriptions with a rating of 300 per cent.

Today's Health Committee in Iowa includes the following Auxiliary members: Mrs. Richardson E. Clark, Manchester; Mrs. Wilton J. Willett, Manchester; Mrs. Morris G. Beddoes, 245 Alta Vista, Waterloo and Mrs. Donovan F. Ward, 1721 Plymouth, Dubuque.

DIVISION OF PUBLIC HEALTH
NURSING—IOWA

A survey of nursing personnel has been made by the Iowa State Nurses' Association, the League of Nursing Education and the Iowa State Department of Health.

The public health and industrial committee noted that the number of existing public health workers falls far below accepted standards. Iowa has 55 counties with no public health nursing service; where nurses are employed, each is serving approximately 20,000 persons.

The national accepted standards for nursing needs specify that there should be at least one public health nurse for each 5,000 persons and one for each 2,000 if bedside service is given; one industrial nurse for each 400 employees and one school nurse for each 1,500 school children.

Other recommendations of the committee for public health nursing in Iowa were:

- 1. That public health nurses in Iowa assist in interesting the public in establishing local health units.
- 2. That efforts be made to attain an adequate number of public health nurses to serve the public.
- 3. That we strive to obtain an adequate number of well-prepared supervising nurses.
- 4. That an effort be made to improve working conditions so that nurses have satisfaction on the job. Improvements should include:
 - a. Adequate compensation.
 - b. Satisfactory personnel policies.
 - c. Opportunities for professional growth.
 - d. Opportunities for promotion.
 - e. Democratic type of administration.

MATTIE BRASS, R.N., M.P.H., Director
Reprinted from *For Iowa's Health*

DIVISION OF HOSPITAL SERVICES—IOWA

This division completed four years of service July 1, 1951. To date 38 projects representing a total project cost of \$21,814,672.84 has been approved by the division to receive grants-in-aid. Further hospital building in the state is uncertain until Congress makes further appropriations.

Of the 38 projects approved, 35 have actually started construction while the remaining three projects are in the final stages of planning. The

38 projects will add 1,589 new hospital beds, of which 161 will be in psychiatric units.

Licensing hospitals and nursing homes is part of the division's service, and to date, of the 174 hospitals licensed, 99 renewal certificates have been issued in the six month period of the licensing year (January to July); 460 nursing home licenses have been issued for the licensing year July 3, 1950 to July 3, 1951.

Nineteen of the newly constructed hospitals have received a hospital license and are operating. Most of the administrators of the new hospitals report they are operating from 50 to 70 per cent of capacity most of the time since opening.

F. W. PICKWORTH, Associate Director
WINNIFRED W. CLEVELAND, Associate Director

AUXILIARY YEARBOOKS

The Yearbook Committee under the direction of Mrs. Claire H. Mitchell has convened several times and reports that yearbooks will soon be ready for distribution to all members. Information contained in the yearbooks will be invaluable to all actively engaged in Auxiliary work.

MEDICAL STENOGRAPHY AND TERMINOLOGY

Night classes in medical stenography and terminology will begin October 2 at the American Institute of Business, Tenth and Grand Avenue, Des Moines. Classes will be held on Tuesday and Thursday evenings from 8:30 to 9:30 p. m. Short-hand is not an absolute requirement as 70 per cent of the course is pronunciation, spelling and definition of medical terms. As only a limited number may enroll, applications should be made to the instructor, Miss Etta M. Miller, Personnel Director, AIB. Telephone 4-4221.

SPEAKER'S BUREAU RADIO SCHEDULE

WOI—Thursdays at 11:15 a. m.

TEA FOR THREE

- October 4 Colds
- October 11 Exercise
- October 18 Vision and Hearing Aids
- October 25 You and Your Doctor

WSUI—Tuesdays at 11:45 a. m.

THE BEST IS YET TO BE

- October 2 New Spring
- October 9 Never too Old
- October 16 End of the Rainbow
- October 23 The Apple Tree

STATE DEPARTMENT OF HEALTH



HEALTH IN THE SCHOOL ROOM

During the past week at the Iowa State Fair we witnessed champion livestock, prize winning pickles and modern stream-lined tractors and plows. We also cast a judge's eye at Mr. and Mrs. Iowa and their families, all of them taking a big day at the fair in full stride. We were impressed that those youngsters were about to give over their summer's freedom for a nine month's season of school and wondered what those months in the classroom would bring.

The schools of our state realize that health and health education are as much their concern as are reading and arithmetic. If a healthy child enters school, the school realizes its responsibility toward helping maintain that positive degree of health. They understand too that should a child with remedial or partially remedial physical defects enter school, they have a responsibility in helping to correct these defects to the extent they may be corrected. They know too that health education begins with teaching of health habits in the beginning years and, that as the child's understanding increases, teaching of health facts is increased. They realize also as a final goal that health education, to be effective in the school, must be projected into the homes of the children and throughout the community supporting the school.

How are these aims achieved? The school's health staff begins with the school superintendent. The county superintendent of schools is by law a member of the county board of health. This gives him a definite and an authoritative voice in health matters together with an equally definite obligation regarding health problems. Teachers are required to have had courses in health and health education. The physician, as a local or school health officer, helps formulate and carry out the health program. The school nurse, the city nurse and the county nurse are other vital additions to a good health program. They work whether "school keeps or not." For example, these nurses worked during the month of August with pre-school checks of every school age child in Mahaska County in a ringworm control project. The P.T.A., with their annual summer round-up, works with physicians and nurses in every county of the

state. Our Iowa Tuberculosis and Health Association in its joint program with the Division of Tuberculosis Control of the State Department of Health, has entered upon a program of tuberculin testing with any necessary x-ray follow-up of all school bus drivers. Many cities and counties as Iowa Falls, Vinton and Cherokee County, have asked that the program be extended to include all employees (teachers, lunch room workers and janitors).

The school lunch programs are another factor vital to the health of most schools. Here the school assumes a responsibility to see that a good noon lunch is placed before each child and that he eats it. This replaces the cold lunch brought from home or the hamburgers and soda pops from the corner store. The school thus entering the food handling business expects to run that business with the same standards of cleanliness and sanitation expected of the downtown restaurant. The school's water supply must be such that it can be given a clean bill of health by our sanitary engineers. Supervision of school toilets is no longer an activity to be left to the supervision of the janitor. These sanitary factors, together with proper heating and lighting and spacing of desks and chairs are just as important as the immunization programs now routine in most of our counties.

Control of communicable disease is, of course, a part of the health program. We know it must start in the home with the parents keeping the sick child or the child developing a cold at home. The school cooperates by accepting standard rules and regulations for control of communicable disease. They follow through with approved immunization procedures with the local physicians giving the immunizations either in their offices as is done in Carroll County or in the schools as is being done in Winnebago County.

School health is big business in Iowa. Only a few of the interested agencies or groups have been mentioned here. Many others as the Iowa Society For Crippled Children and Adults, Inc., the Iowa Vocational Rehabilitation for Disabled Civilians and the Iowa Public Safety Commission, work actively in the field of education and health education. It is a combined venture. School health can be positive when we marshall every force at our disposal and use that force to an advantage.

IOWA VITAL STATISTICS

First 6 Months of 1951 and 1950

A summary of the major vital events reported during the first six months of this year and the same period of 1950 is given in the following table:

	First 6 Months 1951	First 6 Months 1950	Increase or Decrease
Live Births	32,156	29,336	+ 2,820
Total Deaths	13,006	13,698	- 692
Infant Deaths	844	770	+ 74
Marriages	11,747	12,142	- 395
Divorces	2,439	2,603	- 164

It can be observed that deaths, marriages and divorces are lower this year than during the comparable period of last year. The most striking feature of the above data is the increase of 2,820 (9.6 per cent) in births this year over last year. This leads to the conclusion that total births for this year probably will be approximately the same as in the peak year of 1947 when 64,975 births were recorded in Iowa. The number of infant deaths also increased, however, this is to be expected as a result of the increase in the number of births. The number of infant deaths expressed as a rate per 1,000 live births is the same in both 1950 and 1951 (26.2 infant deaths per 1,000 live births).

Accident mortality data for the two six month periods are as follows:

	First 6 Months 1951	First 6 Months 1950	Increase or Decrease
All Accidents	799	818	- 19
Motor Vehicle Accidents	266	258	+ 8
Fire and Explosion	69	99	- 30
Fire Arm Accidents	8	12	- 4
Drownings	32	33	- 1
All Other Accidents	424	416	+ 8

There was a sharp decline in the number of deaths due to fires and explosions in the first six months of 1951 as compared with 1950. This results from the fact that the 1950 figure is abnormally high, due to the disastrous Davenport hospital fire. Declines also are indicated for deaths due to fire arms accidents and drownings, while motor vehicle accident fatalities and fatalities due to all other types of accidents increased somewhat.

The number of poliomyelitis deaths reported during the first six months of this year was one less than during the same period of last year (eight and nine deaths respectively). Of the eight deaths this year, three resulted from cases with an onset in 1950, while the other five resulted from cases with an onset this year. The range in age of these eight decedents was from seven months to 37 years.

POLIOMYELITIS

The following is a summary of poliomyelitis cases for 1951 compared with a summary for the similar period of 1950.

County	Cases January 1 Through June 30	July Cases	August Cases	First two Weeks September	1951 Total Cases
Adair	—	—	—	1	1
Appanoose	—	1	—	1	2
Audubon	—	—	1	—	1
Benton	—	1	—	—	1
Black Hawk	1	—	13	1	15
Bremer	1	—	2	1	4
Buchanan	—	—	2	—	2
Buena Vista	—	—	3	—	3
Butler	—	1	1	—	2
Calhoun	1	3	—	2	6
Carroll	—	—	1	3	4
Cedar	1	—	1	1	3
Cerro Gordo	1	—	—	1	2
Cherokee	—	1	—	—	1
Chickasaw	—	—	1	1	2
Clay	—	1	2	1	4
Clayton	—	—	1	—	1
Clinton	—	—	4	—	4
Crawford	—	—	2	—	2
Dallas	—	—	1	—	1
Decatur	1	—	—	—	1
Delaware	—	—	2	—	2
Des Moines	1	—	—	2	3
Dubuque	—	1	2	1	4
Fayette	2	1	—	—	3
Floyd	1	—	2	—	3
Franklin	—	1	1	2	4
Fremont	—	—	1	1	2
Grundy	2	—	1	—	3
Hamilton	2	—	—	—	2
Hancock	—	—	1	—	1
Hardin	1	1	—	1	3
Harrison	—	2	—	1	3
Henry	—	—	1	—	1
Ida	—	—	—	1	1
Iowa	—	—	1	—	1
Jasper	—	—	2	3	5
Johnson	2	1	9	3	15
Jones	—	1	1	—	2
Keokuk	2	—	1	1	4
Kossuth	1	—	2	1	4
Linn	2	4	5	1	12
Madison	—	—	—	2	2
Mahaska	—	—	1	—	1
Marion	—	—	—	2	2
Marshall	—	—	1	1	2
Mills	1	2	3	—	6
Mitchell	—	—	—	1	1
Monona	—	6	—	—	6
Muscatine	—	2	1	1	4
O'Brien	—	—	3	1	4
Page	4	1	2	—	7
Palo Alto	—	—	1	—	1
Plymouth	1	1	—	—	2
Polk	3	3	13	8	27
Pottawattamie	1	—	2	1	4
Poweshiek	—	—	3	1	4
Scott	1	2	5	—	8
Shelby	—	—	1	1	2
Sioux	—	—	—	2	2
Story	2	2	4	1	9
Tama	1	1	3	—	5
Taylor	—	—	2	1	3
Union	—	1	—	2	3
Wapello	—	4	3	1	8
Warren	2	—	2	—	4
Washington	—	1	3	1	5
Wayne	—	—	2	1	3
Webster	—	1	—	2	3
Winnebago	—	—	2	—	2
Woodbury	1	1	10	2	14
Wright	—	—	2	—	2
Total	39	48	136	63	286*

* Total 1951 cases as of September 8.
72 counties have reported cases.

Cases by months for 1950	
January	13
February	13
March	5
April	12
May	10
June	26
July	178
August	229
September (1st 2 weeks)	147
Cases as of September 9, 1950	632

(Continued on page 443)

Iowa Academy of General Practice

President—Cecil V. Hamilton, M.D., 145 E. 4th St., Garner

President-Elect—Joseph G. Fellows, M.D., 405½ Douglas Ave., Ames

Vice President—Ivan T. Schultz, M.D., 106 N. Taft St., Humbolt

Secretary-Treasurer—William M. Sproul, M.D., 912 Equitable Bldg., Des Moines

POST-GRADUATE MEETING

Hotel Savery, Des Moines

November 8, 1951

General Topic: "Gastroenterology"

PROGRAM

- 8:00 a. m. Registration
- 9:00 a. m. "Functional Diseases of the Gastro-Intestinal Tract"—Part I
Carl G. Morlock, M.D., Rochester, Minn.
Assistant Professor of Medicine
University of Minnesota
- 10:30 a. m. "Diagnosis and Treatment of Peptic Ulcer"
Frederick Stiegmann, M.D.,
Chicago, Ill.
Assistant Clinical Professor of
Medicine
University of Illinois
- 12:15 p. m. Luncheon. "Problems of Iowa's School of Medicine"
Speaker—William M. Fowler, M.D.,
Iowa City
- 2:00 p. m. "Functional Diseases of the Gastro-Intestinal Tract"—Part II
Carl G. Morlock, M.D.
- 3:30 p. m. "Diseases of the Large Bowel"
Frederick Stiegmann, M.D.
-

ASSOCIATE MEMBERS OF AAGP

Definition: Associate memberships include general practitioners who fulfill the requirements for active membership but who have not completed three years of private practice.

Obligations: Same as for active membership; namely, each must show evidence of completion of 150 hours of post-graduate work for each three-year period, including 50 hours of formal

study. Such memberships can be for three years only. If an associate member is not elected into active membership within one year after becoming eligible, he is dropped from the rolls.

Privileges: Same as active members except that associate members cannot vote in business sessions or hold office, but they shall have the privilege of the floor of the Assembly.

Dues: Annual dues to the American Academy, \$5.00. Annual dues to the Iowa Academy, \$5.00.

GP: May subscribe for \$5.00 per year.

To Attain Active Member Status: At the end of three years of associate membership, application is made to the Iowa Academy to be enrolled as an active member. Enrollment fees are charged at this time.

EMERITUS MEMBERS OF AAGP

Definition: Emeritus membership includes:

1. Practicing general practitioners who have reached the age of 70.
2. Practicing general practitioners who have completed 30 continuous years of general practice.

Obligations: Post-graduate study requirements are not demanded of members in this classification.

Privileges: The same as active members.

Dues:

Enrollment fees to American Academy	\$10.00
Annual dues to American Academy	15.00
Annual dues to Iowa Academy	7.50

Total	\$32.50
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GP: Subscription paid in American Academy dues.

ANNOUNCEMENTS

1. Members who attended the Medical Alumni meeting in Iowa City in June, 1950 and 1951, may claim six hours formal credit for each one.

2. The third post-graduate course will be given at Hotel Savery in Des Moines on Thursday, January 24, 1952. Subject: "Geriatrics." Doctors of national reputation will speak.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

LET'S COOK IT RIGHT, by *Adelle Davis*, B.A., M.S. Harcourt, Brace and Co., New York, 1947. Price \$3.00.

METABOLIC METHODS, Clinical Procedures in the Study of Metabolic Functions, by *C. Frank Consolazio*, Chief of Biochemistry, United States Army Medical Nutrition Laboratory, Chicago, Ill.; *Robert E. Johnson*, M.D., D. Phil. (Oxford), Professor and Head of the Department of Physiology, University of Illinois, Urbana, Ill.; and *Evelyn Marek*, M.A., Biochemist, United States Army Medical Nutrition Laboratory, Chicago, Ill. C. V. Mosby Co., St. Louis, Mo., 1951. Price \$6.75.

PROCEEDINGS OF THE SECOND CLINICAL ACTH CONFERENCE Volume I, Research, Volume II, Therapeutics, edited by *John R. Mote*, M.D. The Blakiston Co., Philadelphia, Pa., 1951. Price \$8.50 each volume.

THE PUBLIC HEALTH NURSE AND HER PATIENT, by *Ruth Gilbert*, R.N., Coordinator, Course for Mental Hygiene Consultants and Assistant Professor of Nursing Education, Teacher's College, Columbia University. Harvard University Press, Cambridge, Mass., 1951. Price \$3.75.

TECHNICAL METHODS FOR THE TECHNICIAN, by *Anson Lee Brown*, B.A., M.D., President of the Anson L. Brown, Inc., Columbus, Ohio. Published by the author, 1950. Price \$10.00.

BOOK REVIEWS

THE MANAGEMENT OF FRACTURES, DISLOCATIONS AND SPRAINS, by *John A. Key*, M.D. and *H. Earle Conwell*, M.D. (C. V. Mosby Co., St. Louis, \$16.00).

The fifth edition of this book has been completely revised in order that the advances which have taken place in the treatment of fractures may be included. This is particularly true regarding the treatment of compound fractures and intra-medullary fixation. As a result the volume continues to have a unique position as a reference work for anyone dealing with this subject. The principles of treatment enumerated are tried and true. Without hesitation this book is highly recommended to all physicians.—*E. M. George, M.D.*

HANDBOOK OF MEDICAL MANAGEMENT, by *Milton Chatton*, M.D., *Sheldon Margen*, M.D. and *Henry D. Brainer*, M.D. (University Medical Publishers, Palo Alto, Calif., \$3.00).

This pocket-sized book should be valuable to all medical students and busy practitioners.

It contains much concise information about accepted, up-to-date methods of medical management. Many diagnostic hints and tables on differential diagnosis and therapy should prove of added practical value. Drugs used in the volume are mostly taken from the text of the *United States Pharmacopeia*, the *British Pharmacopeia*, the *National Formulary* and *New and Non-Official Remedies*.—*I. H. Shoheit, M.D.*

FROM A DOCTOR'S HEART, by *Eugene F. Snyder*, M.D. (Philosophical Library, New York, \$3.75).

This volume describes the author's experience in undergoing a coronary occlusion. Included are personal factors which influenced his recovery. Physicians will find the book helpful as a reference book for

apprehensive patients who will obtain a better insight in the problems of heart disease.—*E. M. George, M.D.*

ATLAS OF HUMAN ANATOMY, Volume II, by *M. W. Woerdeman*, M.D. (The Blakiston Co., Philadelphia, \$11.00).

This volume contains drawings of the digestive, respiratory, urogenital and circulatory and nervous systems and sense organs. The majority of these are black and white, with occasional use of color for special organs or systems. The art work is exceptionally fine, anatomical details being shown with good three dimensional effect.

This volume will serve as an excellent reference for medical students or for any one who wishes to refresh himself on anatomical details. My only criticism is the rather limited use of color—and this is missed, particularly in the case of the muscles. However, it is a first rate atlas, and should take its place in medical libraries throughout the country.—*J. M. Bruner, M.D.*

THE 1950 YEAR BOOK OF PHYSICAL MEDICINE AND REHABILITATION (December, 1949-January, 1951), edited by *Frank H. Krusen*, M.D., *Earl C. Elkins* and *George G. Deaver*, M.D. (The Year Book Publishers, Inc., Chicago, \$5.00).

Edited by Dr. Frank Krusen, with the assistance of Drs. George Deaver and Earl Elkins, the advances during 1950 dealing with this subject are presented. The importance of teamwork in rehabilitation is particularly emphasized. There are few branches of medicine which could not obtain benefit from referring to this book for help in special problems of treatment. It is especially recommended to those doctors who are particularly faced with rehabilitation problems.—*E. M. George, M.D.*

STATE DEPARTMENT OF HEALTH

(Continued from page 441)

MORBIDITY REPORT

Disease	Aug. 1951	July 1951	Aug. 1950	Most Cases from these Counties:
Diphtheria	1	0	0	Clinton
Scarlet Fever	12	7	6	Boone, Clinton, Polk
Typhoid Fever	2	2	2	Marshall, Pottawattamie
Smallpox	0	0	0	.....
Measles	31	204	11	Clinton, Dubuque
Whooping Cough	52	78	113	Black Hawk, Clinton, Des Moines
Brucellosis	57	57	14	Cerro Gordo, Buchanan, Woodbury
Chickenpox	10	48	15	Clinton, Linn
Meningitis men.	5	3	3	Howard (2) Jefferson, Johnson, Linn
Mumps	60	93	13	Des Moines, Linn, Johnson
Pneumonia	2	8	0	Polk
Poliomyelitis	136	42	229	Black Hawk, Polk, Woodbury
Rabies in Animals	20	22	24	Polk, Warren—others scattered (7) (2) 1 to a county
Tuberculosis	73	94	65	For the State
Gonorrhea	36	25	108	For the State
Syphilis	142	133	160	For the State

COUNTY MEDICAL SOCIETY OFFICERS

COUNTY	PRESIDENT	SECRETARY	DEPUTY COUNCILOR
Adair.....	R. E. Wiley, Fontanelle.....	A. S. Bowers, Orient.....	A. S. Bowers, Orient
Adams.....	C. L. Bain, Corning.....	J. C. Nolan, Corning.....	A. W. Brunk, Prescott
Allamakee.....	M. F. Kieszau, Postville.....	J. H. McCullough, Waukon.....	J. W. Thornton, Lansing
Appanoose.....	E. F. Ritter, Centerville.....	R. R. Edwards, Centerville.....	
Audubon.....	L. E. Jensen, Audubon.....	H. K. Merselis, Audubon.....	L. E. Jensen, Audubon
Benton.....	E. D. Lovett, Vinton.....	N. C. Knosp, Belle Plaine.....	E. D. Lovett, Vinton
Black Hawk.....	C. W. Seibert, Waterloo.....	G. D. Phelps, Waterloo.....	D. W. Bickley, Waterloo
Boone.....	T. E. Kane, Boone.....	H. C. Scharnweber, Boone.....	H. C. Scharnweber, Boone
Bremer.....	H. W. Rathe, Waverly.....	R. P. Hardwig, Waverly.....	
Buchanan.....	P. J. Leehey, Independence.....	J. F. Loock, Independence.....	J. F. Loock, Independence
Buena Vista.....	K. H. Prescott, Storm Lake.....	T. E. Shea, Storm Lake.....	H. E. Farnsworth, Storm Lake
Butler.....	M. D. Enna, Dumont.....	F. F. McKean, Allison.....	B. Ensley, Shell Rock
Calhoun.....	F. W. Hobart, Lake City.....	C. R. Wilson, Manson.....	W. W. Weber, Pomeroy
Carroll.....	R. B. Morrison, Carroll.....	J. M. Tierney, Carroll.....	J. R. Martin, Carroll
Cass.....	W. F. Giegerich, Atlantic.....	R. H. Moe, Griswold.....	
Cedar.....	H. E. O'Neal, Tipton.....	O. E. Kruse, Tipton.....	P. M. Hoffman, Tipton
Cerro Gordo.....	E. H. Barg, Mason City.....	G. I. Tice, Mason City.....	L. W. Swanson, Mason City
Cherokee.....	W. C. Brinegar, Cherokee.....	D. C. Koser, Cherokee.....	C. E. Broderick, Cherokee
Chickasaw.....	A. L. Murphy, Fredericksburg.....	J. H. Ahrens, New Hampton.....	P. E. Gardner, New Hampton
Clarke.....	C. R. Harken, Osceola.....	H. N. Boden, Osceola.....	H. E. Stroy, Osceola
Clay.....	L. D. Colbert, Royal.....	G. F. Fieselmann, Spencer.....	C. C. Jones, Spencer
Clayton.....	A. C. Mueller, Monona.....	A. R. Powell, Elkader.....	P. R. V. Hommel, Elkader
Clinton.....	G. M. Ellison, Clinton.....	E. O. Hicks, Clinton.....	R. F. Luse, Clinton
Crawford.....	J. M. Hennessey, Manilla.....	J. J. Gleeson, Vail.....	R. M. Johnson, Denison
Dallas-Guthrie.....	C. S. Fail, Adel.....	C. A. Nicoll, Panora.....	C. A. Nicoll, Panora
Davis.....	R. Schoonover, Bloomfield.....	H. C. Young, Bloomfield.....	G. W. Gilfillan, Bloomfield
Decatur.....	K. R. Brown, Leon.....	T. R. Viner, Leon.....	F. A. Bowman, Leon
Delaware.....	P. Stephen, Manchester.....	P. G. Meyer, Manchester.....	
Des Moines.....	H. Eastburn, Burlington.....	J. F. Sulzbach, Burlington.....	F. G. Ober, Burlington
Dickinson.....	R. F. Wolcott, Spirit Lake.....	P. A. Scott, Spirit Lake.....	T. L. Ward, Arnolds Park
Dubuque.....	A. G. Plankers, Dubuque.....	R. J. McNamara, Iowa City.....	D. F. Ward, Dubuque
Emmett.....	H. A. Lindholm, Armstrong.....	J. L. Powers, Estherville.....	C. S. Kirkegaard, Estherville
Fayette.....	W. B. Henderson, Oelwein.....	C. C. Hall, Maynard.....	C. C. Hall, Maynard
Floyd.....	R. A. Fox, Charles City.....	E. V. Ayers, Charles City.....	R. A. Fox, Charles City
Franklin.....	W. R. Arthur, Hampton.....	R. T. Day, Hampton.....	
Fremont.....	R. Lovelady, Sidney.....	A. E. Wanamaker, Hamburg.....	R. Lovelady, Sidney
Greene.....	M. H. Brinker, Jefferson.....	E. D. Thompson, Jefferson.....	M. H. Brinker, Jefferson
Grundy.....	H. V. Kahler, Reinbeck.....	W. K. Kienzie, Wellsburg.....	E. A. Reedholm, Grundy Center
Hamilton.....	B. F. Howar, Webster City.....	W. B. McGahey, Stratford.....	B. F. Howar, Webster City
Hancock-Winnebagot.....	T. McMahon, Garner.....	H. G. Feldick, Buffalo Center.....	C. V. Hamilton, Garner
Hardin.....	W. A. Johnson, Iowa Falls.....	F. N. Cole, Iowa Falls.....	L. F. Parker, Iowa Falls
Harrison.....	F. X. Tamisiea, Missouri Valley.....	A. C. Bergstrom, Missouri Valley.....	F. A. Hanson, Magnolia
Henry.....	J. R. Beebe, Mt. Pleasant.....	J. G. Widmer, Wayland.....	J. S. Jackson, Mt. Pleasant
Howard.....	M. E. Henslin, Cresco.....	C. A. Field, Cresco.....	P. A. Nierling, Cresco
Humboldt.....	I. T. Schultz, Humboldt.....	T. G. Herrick, Gilmore City.....	I. T. Schultz, Humboldt
Ida.....	E. H. Heilman, Ida Grove.....	J. B. Dressler, Ida Grove.....	M. W. Grubb, Galva
Iowa.....	G. W. Howe, Marengo.....	I. J. Sinn, Williamsburg.....	C. F. Watts, Marengo
Jackson.....	J. A. Broman, Maquoketa.....	W. C. Zabloudil, Preston.....	F. J. Swift, Maquoketa
Jasper.....	J. R. Singer, Newton.....	L. H. Koelling, Newton.....	J. W. Ferguson, Newton
Jefferson.....	R. A. McGuire, Fairfield.....	J. W. Castell, Fairfield.....	R. A. McGuire, Fairfield
Johnson.....	W. Spear, Oakdale.....	E. J. Boyd, Iowa City.....	G. C. Albright, Iowa City
Jones.....	R. D. Paul, Anamosa.....	R. W. Myers, Monticello.....	T. M. Redmond, Anamosa
Keokuk.....		J. Maxwell, What Cheer.....	
Kossuth.....	J. N. Kenefick, Algona.....	J. M. Schutter, Algona.....	J. G. Clapsaddle, Burt
Lee.....	B. D. Van Werden, Keokuk.....	W. B. Kasiske, Keokuk.....	F. L. Feightner, Ft. Madison
Linn.....	E. H. Files, Cedar Rapids.....	W. K. Cooper, Cedar Rapids.....	
Louisa.....	L. E. Weber, Wapello.....	J. H. Chittum, Wapello.....	J. H. Chittum, Wapello
Lucas.....	R. C. Gutch, Chariton.....	R. E. Anderson, Chariton.....	R. E. Anderson, Chariton
Lyon.....	A. C. Wubben, Rock Rapids.....	S. H. Cook, Rock Rapids.....	H. E. Cook, Rock Rapids
Madison.....	G. J. Anderson, Winterset.....	P. F. Chesnut, Winterset.....	C. B. Hickenlooper, Winterset
Mahaska.....	F. O. Voigt, Oskaloosa.....	J. Lederman, Oskaloosa.....	E. B. Wilcox, Oskaloosa
Marion.....	R. V. Mater, Knoxville.....	W. W. Bourke, Knoxville.....	H. L. Bridgeman, Knoxville
Marshall.....	E. J. Marble, Marshalltown.....	E. L. Keyser, Marshalltown.....	R. C. Carpenter, Marshalltown
Mills.....	W. A. DeYoung, Glenwood.....	T. E. Shonka, Malvern.....	T. E. Shonka, Malvern
Mitchell.....	C. F. Watson, Stacyville.....	R. B. Isham, Osage.....	J. O. Eiel, Osage
Monona.....		P. L. Wolpert, Onawa.....	C. W. Young, Onawa
Monroe.....	W. S. Chester, Albia.....	H. J. Richter, Albia.....	H. J. Richter, Albia
Montgomery.....	F. L. Croxdale, Villisca.....	S. D. Poore, Villisca.....	E. L. Croxdale, Villisca
Muscatine.....	D. C. Alftine, Muscatine.....	R. F. Klein, Muscatine.....	C. P. Phillips, Muscatine
O'Brien.....	R. E. Griffin, Sheldon.....	W. S. Balkema, Sheldon.....	T. D. Kas, Sutherland
Osceola.....	E. S. Aeilts, Sibley.....	F. M. Rizzo, Sibley.....	F. Reinsch, Ashton
Page.....	H. R. Henstorf, Shenandoah.....	S. T. Ramsdell, Clarinda.....	C. N. Flynn, Clarinda
Palo Alto.....	J. E. Black, Emmetsburg.....	W. A. Johnson, Emmetsburg.....	H. L. Brereton, Emmetsburg
Plymouth.....	R. J. Fisch, LeMars.....	L. C. O'Toole, Le Mars.....	H. L. Vander Stoep, Le Mars
Pocahontas.....	E. O. Loxterkamp, Rolfe.....	C. L. Jones, Gilmore City.....	C. L. Jones, Gilmore City
Polk.....	C. A. Sones, Des Moines.....	F. C. Coleman, Des Moines.....	R. J. Steves, Des Moines
Pottawattamie.....	J. D. Hennessy, Council Bluffs.....	A. M. Pedersen, Council Bluffs.....	G. V. Caughlan, Council Bluffs
Poweshiek.....	J. C. DeMuelenaere, Grinnell.....	L. C. Hickerson, Brooklyn.....	S. D. Porter, Grinnell
Ringgold.....	W. G. Doss, Mt. Ayr.....	J. W. Hill, Mt. Ayr.....	E. J. Watson, Diagonal
Sac.....	C. E. Lierman, Lake View.....	A. A. Blum, Wall Lake.....	C. E. Lierman, Lake View
Scott.....	P. A. White, Davenport.....	H. B. Weinberg, Davenport.....	A. P. Donahoe, Davenport
Shelby.....	G. E. Larson, Elk Horn.....	R. E. Donlin, Harlan.....	J. H. Spearing, Harlan
Sioux.....	D. K. Haggard, Hawarden.....	C. B. Murphy, Alton.....	W. Doornink, Orange City
Story.....	H. Hildebrand, Ames.....	W. B. Armstrong, Ames.....	
Tama.....	K. E. Fee, Toledo.....	A. J. Havlik, Tama.....	A. J. Havlik, Tama
Taylor.....	G. W. Rimel, Bedford.....	W. H. Cash, Lenox.....	G. W. Rimel, Bedford
Union.....	C. C. Rambo, Creston.....	H. J. Peggs, Creston.....	C. C. Rambo, Creston
Van Buren.....	L. A. Coffin, Farmington.....	J. T. Worrell, Keosauqua.....	L. A. Coffin, Farmington
Wapello.....	S. Brody, Ottumwa.....	E. B. Hoeven, Ottumwa.....	C. A. Henry, Farson
Warren.....	C. A. Trueblood, Indianola.....	C. H. Mitchell, Indianola.....	C. H. Mitchell, Indianola
Washington.....	C. W. Beckman, Kalona.....	W. S. Kyle, Washington.....	E. D. Miller, Wellman
Wayne.....	C. N. Hyatt, Humeston.....	C. F. Brubaker, Corydon.....	J. H. McCall, Allerton
Webster.....	O. N. Glesne, Fort Dodge.....	E. M. Van Patten, Fort Dodge.....	C. J. Baker, Fort Dodge
Winnebush.....	R. V. Svendsen, Decorah.....	L. C. Kuhn, Decorah.....	L. C. Kuhn, Decorah
Woodbury.....	F. D. McCarthy, Sioux City.....	M. A. Blackstone, Sioux City.....	D. B. Blume, Sioux City
Worth.....	G. S. Westlv, Manly.....	B. H. Osten, Northwood.....	
Wright.....	G. J. Hruska, Belmond.....	J. R. Christensen, Eagle Grove.....	S. J. Leinbach, Belmond

SOCIETY PROCEEDINGS

PERSONALS

Dr. Walter D. Abbott, Des Moines, will speak on "Complications of Head Injuries" at the annual meeting of the Missouri Society for Neurology and Psychiatry October 13 in St. Louis, Mo.

Dr. Arthur B. Cloud, formerly of Peoria, Ill., has begun the practice of medicine in Audubon. Dr. Cloud was graduated from Tufts Medical School, Boston, Mass., and interned at St. Luke's Hospital, Denver, Colo.

Dr. Loran E. Coppoc, recently returned Korea veteran, has begun the practice of medicine in Ottumwa. A 1944 graduate of the University of Nebraska College of Medicine, Omaha, he formerly was associated with the Quincy Clinic in Quincy, Ill.

Dr. Kenneth R. Cross, formerly of Des Moines, has moved to Iowa City where he will be in charge of the laboratory at the Veterans Administration Hospital.

Dr. George H. Dolmage, who was formerly located in Mason City, has begun the practice of ophthalmology in Phoenix, Ariz.

Dr. Abraham Gelperin, formerly of New Haven, Conn., began his duties as director of health for Des Moines September 18.

Dr. Charles P. Hawkins has become associated with **Drs. Robert C. Eaton** and **Richard A. Young** in Clarion. A 1950 graduate of Marquette University, Milwaukee, Dr. Hawkins recently completed his internship at the S.U.I. hospitals.

Dr. Kriss Kerr has opened an office in Paton for the general practice of medicine. A recent graduate of the SUI College of Medicine, Dr. Kerr interned at the Cleveland City Hospital, Cleveland, Ohio.

Dr. John MacGregor, formerly of Madison, Wis., has joined **Drs. B. Raymond Weston**, **Egmont H. Barg** and **Frederick C. Brush** in Mason City in the practice of surgery. Dr. MacGregor, a graduate of the College of Physicians and Surgeons, Columbia University, interned at the University Hospitals, Iowa City. After teaching at the SUI College of Medicine, Dr. MacGregor completed a three years' residency at the Wisconsin General Hospital, Madison, Wis.

Dr. Jean A. Marshall has begun the practice of medicine in Solon. A 1950 graduate of the SUI College of Medicine, Dr. Marshall served her internship at the S.U.I. Hospitals.

Dr. John McClelland has become associated with **Drs. Leo A. Gaukel** and **Paul L. Wolpert** in Onawa. A graduate of Creighton University School of Medicine, Omaha, Nebr., Dr. McClelland practiced in his native Hawaii. After military service, he completed special ear, eye, nose and throat training and for the past five years had been chief of that department at Winters Veterans Administration Hospital, Topeka, Kan.

Dr. Lucien E. Morris, Iowa City, is participating in a medical mission to Israel and Iran during September and October. The mission is sponsored by the Unitarian Service Committee and the World Health Organization of the United Nations.

Dr. Lewis D. Norris has begun the practice of medicine in Newton. A graduate of the SUI College of Medicine, Dr. Norris served his internship at Jefferson Davis Hospital, Houston, Texas.

Dr. Loren G. Peterson has become associated with **Dr. Harlow J. Fishman** in Holstein. A 1950 graduate of the SUI College of Medicine, Dr. Peterson recently completed his internship at the Methodist Hospital, Indianapolis, Ind.

Dr. Rheinhold Snikeris of the Cherokee Mental Health Institute staff, has resigned to accept a similar position in Frankfort, Ky.

Dr. George W. Wilkinson, formerly of Burlington, has begun a course in anesthesiology at the University Hospitals in Iowa City. Dr. Wilkinson was forced to discontinue his practice because of a voice difficulty.

Dr. Robert G. Wilson of Griswold, has begun practicing medicine with **Dr. Francis X. Tamisea** in Missouri Valley. A 1950 graduate of the Creighton University School of Medicine, Omaha, Dr. Wilson recently completed his internship at Mercy Hospital, Council Bluffs.

Dr. George L. Wadsworth, superintendent of the Woodward State Hospital and School, has resigned to take a similar post at the Rosewood State Training School for Mentally Deficient at Owings Mills, Md.

DEATH NOTICES

Dr. Lawrence Charles Hanson, 42, Jefferson physician, died in Salt Lake City, Utah, June 18 of coronary occlusion. He was a 1932 graduate of the State University of Iowa College of Medicine. Dr. Hanson was a member of the Greene County and Iowa State Medical Societies.

Dr. Leslie M. Nourse, 79, retired Des Moines physician and surgeon, died August 15 following a year's illness. Born near Booneville, Dr. Nourse was graduated from the Drake University College of Medicine in 1908 and at the time of his death was a life member of the Polk County and Iowa State Medical Societies.

Dr. Fred Byers Sigworth, 77, Anamosa physician for 51 years, was killed August 26 in a highway accident near Wyoming. Born in Waubeek, Dr. Sigworth was graduated from the Rush Medical College, Chicago, in 1900. He was a life member of the Jones County and Iowa State Medical Societies.

ROSTER OF IOWA PHYSICIANS
IN MILITARY SERVICE

As of September 15, 1951

Ackerman, J. H., Clarksville (Melbourne, Fla.).....	Asst. Surg., U.S.P.H.S.
Alberts, M. E., Des Moines (Des Moines).....	Lt., U.S.N.R.
Ashby, J. D., Davenport (Battle Creek, Mich.).....	Major, A.U.S.
Bartholomew, R. D., Lake City (Oakland, Calif.).....	Lt. (jg), U.S.N.R.
Bartley, R. L., Sully (FPO San Francisco, Calif.).....	Lt., U.S.N.R.
Benge, D. K., Dows (Ft. Leonard Wood, Mo.).....	1st. Lt., U.S.A.
Braatlien, N. T., Des Moines (Camp Carson, Colo.).....	1st. Lt., U.S.A.F.
Brown, R. C., Mason City (Kansas City, Kan.).....	1st. Lt., A.U.S.
Camp, J. R., Thompson (San Diego, Calif.).....	Lt. (jg), U.S.N.R.
Carroll, T. J., Sibley.....	
Carson, R. W., Winterset (APO San Francisco, Calif.).....	1st. Lt., A.U.S.
Coyne, K. M., Burlington (FPO San Francisco, Calif.).....	Cmdr., U.S.N.R.
Dalager, R. D., Ottumwa (Philadelphia, Pa.).....	U.S.N.R.
Davidson, M. C. (APO New York, N. Y.).....	Lt. Col., A.U.S.
Davis, S. K., Des Moines (Seattle, Wash.).....	
Donahue, J. F., Fort Dodge (San Antonio, Texas).....	U.S.A.F.
Fitch, R. E., Des Moines (Bangor, Me.).....	1st. Lt., U.S.A.F.
From, Paul, West Des Moines (San Antonio, Texas).....	1st. Lt., U.S.A.F.
Gladstone, W. S., Jr., Iowa City (Crestview, Fla.).....	U.S.A.F.
Goenne, W. C., Jr., Davenport (Tacoma, Wash.).....	Major, A.U.S.
Gustafson, J. E., Des Moines (Camp Roberts, Calif.).....	1st. Lt., A.U.S.
Jensen, K. V., Newton (San Antonio, Texas).....	1st. Lt., U.S.A.F.
Johnson, A. A., Jr., Council Bluffs (Ft. Worth, Texas).....	1st. Lt., U.S.A.F.
Johnson, F. N., Madrid (San Antonio, Texas).....	1st. Lt.
Johnson, M. H., Iowa City (Tacoma, Wash.).....	Capt., A.U.S.
Keil, P. G., Des Moines (Bangor, Me.).....	Major, U.S.A.F.
King, R. E., Des Moines (APO San Francisco, Calif.).....	Capt., A.U.S.
Krause, R. E., Ottumwa (Camp Atterbury, Ind.).....	1st. Lt., A.U.S.
Kruse, R. H., Conrad (San Diego, Calif.).....	U.S.N.R.
Kurth, R. J., Waterloo.....	
Landis, S. N., Des Moines (Topeka, Kan.).....	Major, U.S.A.F.
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THE USE OF CORTISONE IN RHEUMATIC DISEASES*

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During the past year the increased availability of cortisone and ACTH (adrenocorticotrophic hormone) has enabled many physicians to become familiar with the response of certain rheumatic conditions, especially rheumatoid arthritis, to these substances. But the mechanism by which these antirheumatic effects are brought about remains completely obscure.

The antirheumatic activity of ACTH is dependent on stimulation of the patient's own adrenal glands to produce cortisone-like materials; hence the antirheumatic effect of these two agents, cortisone and ACTH, is similar, if the patient has normally reactive adrenal cortices. In the matter of dosage there is some difference, however; current preparations of ACTH are about twice as potent as cortisone, milligram for milligram. Therefore, the action of 100 mg. of cortisone should not be compared to that of 100 mg. of ACTH, but rather to the action of 40 or 50 mg. of ACTH.

RHEUMATOID ARTHRITIS

Therapeutic Effect—A patient with rheumatoid arthritis to whom cortisone is administered in adequate doses exhibits a rather characteristic pattern of response. Within a few hours, or at most a day or two, there is diminution in articular and muscular stiffness; soon thereafter, or at the same time, pain at rest disappears. Relief of pain on motion and diminution in tenderness quickly follow, along with increase in range of articular motion. Subsidence of synovial swelling may proceed somewhat more slowly.

Concomitantly, patients experience a feeling of well-being and increased strength and vigor; the appetite increases and there is gain in weight, loss of fever and diminution in size of rheumatoid nodules and lymphadenopathy.

The major portion of subjective improvement is often seen within the first week and of objective improvement within the first two to three weeks, after which time more gradual improvement may occur for another month or two.

Laboratory Tests—Laboratory evidence of improvement is seen in reduction of sedimentation rate of erythrocytes, increase in concentrations of hemoglobin and erythrocytes and reversion of the albumin-globulin ratio toward normal.

Daily doses of 100 mg. or less of cortisone appear to have little effect on most of the blood and urinary electrolytes usually studied. Larger doses, such as 200 mg. daily, can lead to pronounced changes in blood electrolytes, the ultimate result of which is the development of a hypopotassemic, hypochloremic alkalosis similar to that seen in some cases of Cushing's syndrome. It should be noted that doses of cortisone in the usual therapeutic range for rheumatoid arthritis (100 mg. or less) give little evidence in the blood which is of value in determining whether or not the patient is suffering from an overdose of cortisone; yet certain patients at these levels of administration of cortisone will exhibit unquestionable clinical signs of significant hypercortisonism. A reasonable conclusion would seem to be that the physician must not depend on laboratory tests for regulation of cortisone dosage, but rather must follow closely the clinical response of the patient undergoing treatment.

Specimens for biopsy taken before and during treatment evidence the inhibitory effect of cortisone on the synovial inflammatory reaction.

Irreversible Changes—An important concept of the relation of cortisone to the pathology of rheumatoid arthritis merits attention. Arbitrarily pathologic factors might be divided into (1) pathologic physiology, evidenced by the response of tissue to the disease and (2) pathologic anatomy, in the destructive changes consequent to this response. Cortisone may be thought to inhibit the active response of tissue, but it does not repair damage already done. Therefore, damage to cartilage and bone and scarring and contraction of fibrous tissue should not be expected to yield to cortisone alone. The use of large doses of corti-

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sone to attempt to overcome signs and symptoms dependent on these irreversible changes is not warranted.

Results After Withdrawal of Cortisone—Despite the evidences of marked influence of cortisone and ACTH on the manifestations of active rheumatoid arthritis, neither of these substances can be considered a cure for this disease. This fact is made apparent by the usually rapid recurrence of signs and symptoms of rheumatoid arthritis when the administration of these materials is stopped.

In a few cases, however, a significant degree of improvement seems to be maintained for several weeks or months after treatment. In others, the symptoms which recur are interpreted by the patient as being severer than before treatment with cortisone. The course of rheumatoid arthritis is in many instances characterized by remissions and exacerbations. It remains to be determined whether the status of the patient's disease after cessation of treatment with cortisone simply reflects the natural course of the disease or whether it has been altered.

Repeated Courses—In the group of patients which has come under my observation and that of my colleagues the administration of cortisone in repeated courses has resulted in an essentially similar response for each course. Allowance was made for certain changes owing to the natural progressive course of the disease.

Side Effects—Inasmuch as cortisone does not cure rheumatoid arthritis and since symptoms usually recur rather rapidly when the administration of cortisone is discontinued, the physician must plan a long program of treatment with cortisone in many instances. It is in such circumstances, however, that the effects of cortisone, other than the antirheumatic ones, become of considerable importance. These effects, undesirable from the standpoint of the rheumatologist, are nonetheless physiologic ones. Cortisone is a potent adrenal cortical hormone capable of reproducing most, if not all, of the signs and symptoms of Cushing's syndrome.

Fairly common have been insomnia, mild restlessness or nervousness, rounding of the face and retention of fluid. Occasionally seen are hypertrichosis, folliculitis or acne, menstrual disturbances, striae and fatty deposits in supraclavicular regions or, less commonly, in the retrocervical region. Less frequent have been muscular weakness, serious electrolyte disturbances, altered libido, increased blood pressure, significant alteration of carbohydrate metabolism and exacerbation of peptic ulcer.

It should be emphasized that it is rare for one patient to have more than one or two of these side effects. With cessation of administration of cortisone these effects subside.

Those factors which particularly influence the occurrence of side effects are: dosage, duration of

treatment and susceptibility of the patient. In regard to this latter factor it appears that side effects are particularly likely to develop among children and women in the menopausal period. In general the larger the dose and the longer the duration of treatment the greater is the incidence of side effects.

Certain side effects of special concern are: (1) reduction of carbohydrate tolerance in diabetic or latent diabetic patients, (2) major alterations in psyche, (3) spontaneous fractures among patients with osteoporosis (probably owing more to overactivity than to osteoporotic action of cortisone in cases so far observed), (4) negative nitrogen and potassium balance, particularly for patients on restricted diets, (5) delayed wound healing, which in our experience has not been a major problem when the patient is receiving 100 mg. of cortisone or less daily, (6) edema of patients with diminished cardiorenal reserve, (7) effect on infections, (8) thrombophlebitis, (9) post-cortisone adrenal suppression syndrome and (10) aggravation of peptic ulcers.

The undesired effect of cortisone in cases of infection is related to the possibility of failure of systemic defensive mechanisms, as for example in active tuberculosis, syphilis or septicemia, and of failure of the clinician to recognize the presence of intercurrent infections due to masking of signs and symptoms by inhibition of the inflammatory reaction.

Thrombophlebitis has developed among certain patients, particularly those undergoing reduction of dose. Whether the incidence of thrombophlebitis in these cases is more than coincidental must be determined by further study.

A state of excessive weakness and fatigability starting a few days after the administration of cortisone is discontinued sometimes develops among patients who receive cortisone for more than two months. Anorexia and nausea also may occur and in certain cases are severe enough to lead to great loss of weight. These symptoms may last days, weeks, or even two to three months. There is some evidence that this state may be due, at least in part, to temporary insufficiency of certain adrenal cortical functions. Awareness of the possibility of "post-cortisone adrenal suppression" is important to the physician whose cortisone-treated patient must undergo surgical measures. Unless cortisone is administered throughout the postoperative period, the stress and strain of surgical intervention may prove fatal to the patient whose adrenal glands have been suppressed.

Exacerbation of symptoms of peptic ulcer and even hemorrhage or perforation have occurred among a few patients who were receiving cortisone or ACTH. The significance of these observations is not yet entirely clear and further study is needed.

Of less significance to the patient's well-being

are such symptoms as acne, mild hirsutism, menstrual disturbances, mild degrees of nervousness, facial rounding, striae and aggravation of menopausal symptoms. Yet these symptoms may be forerunners of more important evidences of hypercortisonism and hence should be watched for carefully.

Control of Side Effects—In light of present knowledge concerning the use of cortisone for rheumatoid arthritis it would appear advisable to use the smallest possible dose consistent with reasonable control of symptoms. If doses which lead to significant untoward effects are required for complete control of symptoms then a smaller dose should be used even though control is less complete.

In certain instances side effects can be controlled by measures other than reduction of dosage of cortisone. Edema may be diminished by a low salt intake with or without the use of diuretics. Estrogens have helped certain women in the menopausal period when nervous irritability and an increased number of hot flushes have developed during treatment with cortisone. Testosterone may be of help if a negative nitrogen balance has developed. Potassium salts are of benefit in cases of hypopotassemia. Mild sedatives may be sufficient to control lesser degrees of insomnia and nervousness. It is hoped that tapering off the dose of cortisone or giving a course of ACTH after the use of cortisone is discontinued may lessen the incidence or severity of the "post-cortisone adrenal suppression syndrome."

Contraindications—An understanding of potential untoward effects from cortisone points the way to caution in the use of cortisone in the face of certain complications such as: (1) diminished cardiorenal reserve, (2) diabetes mellitus, (3) latent or frank psychoses, (4) osteoporosis, (5) active infections, especially tuberculosis and possibly active syphilis, septicemia and other acute infectious diseases, (6) pregnancy and (7) peptic ulcer.

With the possible exception of active infections, none of these complications can be said at present to be absolute contraindications to the use of cortisone. The patients' need for cortisone must be evaluated on an individual basis, and in certain instances the risks associated with taking cortisone may be greater than the benefits to be obtained from its use.

Methods of Administration—Current methods of administration of cortisone and ACTH in the long-term management of rheumatoid arthritis include: (1) the use of large suppressive doses (200 to 300 mg.) initially, then gradual reduction of dose to a minimal daily dose or to minimal doses three times a week or every other day; (2) the use of smaller doses (100 mg. or less) initially, then the same gradual reduction of dose; (3) repeated courses interspersed with treatment-free intervals; (4) alternate courses of cortisone

and ACTH with or without treatment-free intervals and (5) combined use of cortisone and ACTH, continuously or in courses.

Much more investigation will be required to determine the "best" plan for administration of cortisone. Currently, however, the most useful scheme seems to be that of giving moderate or small initial suppressive doses, 100 mg. or less, until symptoms of the active rheumatoid process begin to come under control; then gradual reduction of dose is undertaken, 12.5 mg. to 25 mg. at a time at intervals of three to seven days or more, depending on the patient's response. A minimal maintenance dose is sought, sufficient to yield reasonable control of symptoms but low enough to avoid significant side effects. A majority of patients can be maintained on daily doses ranging from 25 to 62.5 mg.

Supplementary Measures—The patient with rheumatoid arthritis being given cortisone should not fail to avail himself of other measures of assistance such as regular physical and occupational therapy, avoidance of trauma to involved joints, the use of salicylates as needed, the employment of a good general health program including adequate rest and a well-balanced diet, and the use of orthopedic devices and procedures as required in his particular case.

ACUTE RHEUMATIC FEVER

Although the bulk of cortisone and ACTH is being employed in cases of rheumatoid arthritis, a most important development has been the use of these materials in the management of acute rheumatic fever. It is hoped that control of the tissue reaction associated with acute rheumatic fever by means of cortisone may prevent or modify the cardiac complications of this disease, particularly valvular damage. Insufficient time has elapsed and too few cases have been studied to permit more than speculation and hope regarding the long-term results of such experiments.

Clinical Effects—Clinical manifestations of acute rheumatic fever can be quickly suppressed by cortisone or ACTH. Fever, tachycardia and polyarthritis disappear within a few days. Abnormalities of sedimentation rate, serum protein and P-R interval are corrected within three weeks or less in most cases.

Dosage—Initial doses of cortisone should be large, at least 200 mg. daily, and this level should be continued until signs and symptoms of acute rheumatic fever are brought under control; this may require one to three weeks. Then daily doses of 100 mg. may be employed for another one to three weeks, after which progressively smaller doses may be employed until the material can be completely discontinued. At any sign of recurrence of the active process the dose should be increased sufficiently to bring about control of these manifestations. Doses for children may

approximate those for adults, particularly in the early phase of treatment. For infants, somewhat smaller doses may suffice. More rapid reduction of dose may be in order for infants and young children in order to avoid undesirable side effects.

Since acute rheumatic fever is usually a self-limited disease, indefinitely prolonged administration of cortisone is not required as in rheumatoid arthritis. Hence larger doses usually can be employed and certain side effects may be allowed to occur without reducing the dose to a point at which symptoms recur. In some cases, however, in which congestive failure is present, retention of fluid in the early phase of administration of cortisone may throw an increased burden on the heart; it is during this phase that careful management is of extreme importance. Usually these patients can be tided over this initial phase and then as the effect of the cortisone becomes apparent in inhibiting the active carditis, cardiac function may improve rapidly.

Supplementary Measures—Other adjuncts in the treatment of rheumatic fever such as rest in bed, diuretics and specific therapy directed toward the heart should not be neglected. Prophylactic use of sulfonamide drugs or penicillin in the prevention of subsequent attacks is worthy of consideration.

OTHER RHEUMATIC DISEASES

Rheumatoid Variants—In certain other rheumatic diseases cortisone also is effective. Variants of rheumatoid arthritis such as rheumatoid spondylitis, Still's disease, Felty's syndrome, Reiter's syndrome, intermittent hydrops, psoriatic arthritis and the arthritis associated with chronic ulcerative colitis respond in a manner similar to that of typical rheumatoid arthritis.

Collagen Diseases—The final place of cortisone in management of such collagen diseases as disseminated lupus erythematosus, scleroderma and dermatomyositis has not been established. It would appear that some patients having lupus erythematosus can be helped through acute crises by means of cortisone but cure does not ensue from the action of this substance. Scleroderma and dermatomyositis require much more study.

Some patients having periarteritis nodosa apparently can be benefited by cortisone and in a few instances fairly prolonged remissions seem to have been attained. In other instances arterial insufficiency owing to the basic pathologic process involved has been too great to permit recovery even though the inflammatory reaction about the vessels has been inhibited by cortisone.

Osteoarthritis—At the moment indications for the use of cortisone in cases of osteoarthritis are not clear. It would not appear advisable to employ cortisone in these cases at present except under experimental circumstances. A possible danger is that alleviation of pain by cortisone on overuse of an osteoarthritic joint may encourage

the patient to continue to overuse it and so extend the damage already present.

Gout—Cortisone or ACTH will suppress most attacks of acute gouty arthritis. However, colchicine in diarrhea-producing doses will do the same. If the administration of cortisone or ACTH is stopped soon after suppression of an attack of acute gouty arthritis, a large percentage of patients will experience a second attack unless colchicine is given. Therefore, for patients who respond to colchicine, cortisone and ACTH would not appear necessary, but for patients who are unresponsive to colchicine these substances can be of considerable assistance. It is possible that tapering of the dose, as well as administration of colchicine, will help to avoid a secondary attack.

Periarthritis of Shoulder and Shoulder-hand Syndrome—Cortisone has been effective in certain cases of periarthritis of the shoulder and shoulder-hand syndrome. It would appear that the earlier treatment is started in these conditions the more gratifying the result will be. Other standard measures of treatment should not be neglected.

CURRENT DEVELOPMENTS

Compound F—The discovery of the antirheumatic effect of cortisone and ACTH stimulated an enthusiastic search for compounds "just as good" but more readily available in larger quantity and at a cheaper price. A large number of steroid substances closely related to cortisone have been investigated, as well as other substances without chemical relationship. Only compound F, however, has been found to have antirheumatic activity.

Sufficient study of compound F has been prevented by scarcity of material. Only a few patients having rheumatoid arthritis have been treated and only for short periods. The antirheumatic effect of compound F appears comparable to that of cortisone. Whether or not it will have the same side effects remains to be determined by more prolonged studies than have heretofore been undertaken.

Potentiation of Cortisone—Attempts to potentiate the effects of cortisone with other substances such as insulin, salicylates, vitamin C and gold have been unsuccessful thus far. Studies of prolongation of effect by the use of gold injections continued after cortisone is stopped are in progress in various centers but are not ready for analysis.

Oral Administration of Cortisone—Cortisone has been made available for oral use in tablet form. In general the effects of the tablets are the same as those seen when cortisone is given intramuscularly. The tablets usually have a more rapid onset of action and their effect wears off much more quickly than does that of cortisone given intramuscularly. Therefore, the daily dose of tablets of cortisone should be divided into three

or four portions more or less equally spaced throughout the twenty-four-hour period.

Some patients require a slightly larger dose of cortisone given orally than of cortisone administered intramuscularly, but this difference is seldom more than a fourth of the intramuscular dose. Cortisone taken by mouth will not be suitable for certain patients with gastrointestinal upsets or defects in absorption. Certain patients will experience gastrointestinal irritation from oral use of cortisone; fortunately their number is apparently small. The use of cortisone by the oral route affords an effective and a practical method of administration for most patients for whom cortisone is indicated.

SUMMARY AND CONCLUSIONS

The administration of cortisone and ACTH leads to effects which often are useful in the control of manifestations of various rheumatic diseases such as rheumatoid arthritis, acute rheumatic fever, acute gouty arthritis, acute disseminated lupus erythematosus, periarteritis nodosa, peri-arthritis of the shoulder and the shoulder-hand syndrome. Further investigation is required to determine the place of these substances in the management of certain other rheumatic diseases such as osteoarthritis, scleroderma and dermatomyositis.

These hormones also have other effects which, while undesirable from the standpoint of the rheumatologist, are nevertheless of physiologic nature. An understanding of these side effects is important and points the way to caution in the use of these substances by means of proper selection of patients and careful control of the dose. Attempts to find substitutes for cortisone and ACTH or ways to potentiate their antirheumatic effects have been unsuccessful thus far, except for compound F which, on the basis of results of limited studies, appears to be somewhat comparable to cortisone. The use of cortisone orally yields an effective antirheumatic response and affords a practical method of administration in many cases.

MEDICAL TECHNOLOGISTS MEETING

The Iowa Society of Medical Technologists will hold its fall convention November 9 and 10 at the Hotel Savery in Des Moines. Dr. Harry W. Dahl, Des Moines Director of Civilian Defense, will speak on "The Role of the Medical Technologist in Civilian Defense" and Dr. Thomas E. Corcoran, Pathologist at the Veterans Hospital, Des Moines, will speak on "Phases of Medical Technology." All physicians are invited to attend.

THE TRAUMATIC ABDOMEN*

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COUNCIL BLUFFS

THIS discussion will be confined entirely to non-penetrating wounds of the abdomen because of the time limit and because non-penetrating wounds present more difficulty in diagnosis and management. They are more common in civilian practice and are more often associated with severe injuries in other parts of the body. In non-penetrating wounds there is more disagreement as to the necessity for operative intervention and as to the optimum time for surgery if it is deemed advisable. Conversely, penetrating wounds generally get immediate attention and so often the final diagnosis is made on the table.

I am omitting, as beyond the scope of this paper, any discussion of the various forces causing abdominal injury and any discussion of operative procedures or technic, such as incisions, drainage or anesthesia. References to war time cases are also omitted because of the unavailability of case histories, x-ray films, etc.

I confess freely, that my experience is relatively limited and that, excluding war casualties, the number of cases constituting the basis of this presentation is comparatively small.

The purpose of this presentation will be an attempt to show:

- (1) That any abdominal injury is serious and that any person with abdominal trauma, due to blunt force, even though first appearing slight, should be hospitalized, since the clinical impression differs with the stage of the injury.
- (2) That since the severity of an injury can often not be determined immediately, the surgeon must "live with his case," until a definite diagnosis is made and definitive therapy has been carried out.
- (3) That, whenever possible, diagnostic procedures and the treatment of shock should be carried out simultaneously.
- (4) That in a moderate percentage of cases, multiple lesions are present.
- (5) That pre-existing abdominal pathology, medical or surgical, may complicate the picture and increase the diagnostic difficulties.
- (6) That early, a ruptured viscus may produce few signs and that delayed rupture and late sequelae are relatively common.
- (7) That delayed rupture, presents not only a more difficult diagnostic problem but also a poorer prognosis and must be constantly kept in mind.
- (8) That conservatism does not have a conspicuous place in the management of these types of cases, and in most instances it is much better "to look and see rather than to wait and see."

* Presented at the One Hundredth Meeting, Iowa State Medical Society, Sioux City, April 23-25, 1951. Slides accompanied the presentation of this paper.

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TREATMENT OF SHOCK

Of paramount importance in every case is the treatment of shock, if present.

1. Sufficient morphine should be given to relieve pain.

2. If there is no chest or head injury, the foot of the bed should be elevated.

3. Oxygen should be administered by nasal catheter.

4. Blankets should be used; but one should avoid the detrimental effect of overheating.

5. Administration of sodium chloride, with five per cent glucose, should be begun at once, switching to plasma, if shock is without hemorrhage.

6. Whole blood should be started, as soon as available, if shock is due to hemorrhage.

7. The Levine Tube, with suction, is of particular value for several reasons:

a. Diagnostic aid if blood is present in the stomach.

b. Reduces shock if gastric dilatation is present.

c. Therapeutic help, if a gastro-intestinal rupture.

d. Prophylactic against adynamic ileus, gastric dilatation and aspiration pneumonia.

e. An aid in operative technic, if abdomen is to be opened.

DIAGNOSIS

As previously mentioned, diagnostic procedures and the treatment of shock, should, where feasible, proceed concurrently.

Often, early diagnosis is extremely difficult, because the clinical picture may differ with the stage of the injury. Arbitrarily, we are often able to divide these stages into: the original shock period; followed by the so-called "period of illusion," during which symptoms often improve, or even disappear. This interval period may be followed by a period of aggravation.

We repeat, that early, an injured viscus may produce few signs. Tenderness and rigidity are often absent. Vomiting is *generally* absent early, appearing only with the onset of peritonitis.

Pain is nearly always present, in a greater or lesser degree. There is, however, no relationship, between the severity of the pain and the seriousness of the abdominal lesion. The same may be said of tenderness.

It is always to be borne in mind that thoracic cage and vertebral injury often produces spasm of the abdominal wall.

One may also have the so-called "peritoneal shock," due to injury of the abdominal wall, without injury of a viscus, and have abdominal pain, vomiting and clinical shock. Most confusing, is the patient who has a ruptured deep epigastric artery, with all of the signs and symptoms of intra-abdominal bleeding. These two are nearly indistinguishable. Of even greater import, is the patient with a ruptured epigastric artery and associated visceral injury. More often the wall

injury produces the major group of symptoms, at least early. Improvement occurs, and the intra-abdominal injury is temporarily neglected.

It is to be remembered that clinical shock that fails to respond to adequate treatment, must be considered hemorrhage.

DIAGNOSTIC PROCEDURES

1. Repeated and meticulous examinations of the abdomen, including hernial openings noting tenderness, spasm, rebound and masses.

2. Pulse and blood pressure every 15 minutes.

3. Voided urine specimen if possible, otherwise catheterized.

4. Rectal examination to determine: (a.) Blood in lower G-I tract, (b.) Bulging in the cul-de-sac, (c.) Spicules of bone from pelvic fractures and (d.) Crepitation of air in pelvic connective tissue.

5. Sodium Iodide cystogram if hematuria or if bladder are suspected.

6. Cystoscopy if further doubt.

7. Survey film of the abdomen. a. Supine, b. Erect, and/or left lateral decubitus.

8. Peritoneal aspiration is of doubtful value and often dangerous. Small incision under local is better and safer. Can be enlarged up, down, or across.

9. Leukocyte count of doubtful value.

10. Repeated red blood counts and haemoglobin determinations—May indicate the presence of shock or hemorrhage. Repeated serum protein determinations and hematocrit readings may be more significant.

What help may we expect, and what should we look for in "survey" or "scout" films of the abdomen? I do not know why, but it has been our experience that two supine films, even though taken a few moments apart, are more instructive than one, perhaps due to a minor difference in technic. Erect films are also essential, if possible. In lieu of this a left, lateral decubitus. An additional chest film is also advisable.

HELPFUL POSITIVE X-RAY FINDINGS

1. Gas beneath the diaphragm if erect film, or beneath the liver and left lateral wall, if lateral decubitus. As little as 4 cc. of free air will show.

2. Free air around the right kidney in extra-peritoneal duodenal rupture.

3. In a retroperitoneal accumulation, a localized homogeneous shadow, generally pushing the colon mesially.

4. A homogeneous shadow, generally displacing the transverse colon downward, in large accumulations in the lesser sac.

5. Any abnormal mass or shadow.

6. Loss of one or both psoas shadows.

7. Spleen, liver or kidney shadows, visualized, normal or abnormal.

8. Biliary or urinary stones.

9. Fractures of pelvis, lower ribs or vertebrae.

10. Indentation on gastric wall, a gas outline,

or displacement of the stomach, especially in spleen cases.

11. Herniation through a hiatal dehiscence.

12. Presence of an ileus. The ileus picture may be confusing. It may obscure pathology, otherwise visible. Then too, some of the most extensive cases of ileus are caused by rib and vertebral fractures, minor tears of the diaphragm and even contusions of abdominal wall.

THE CASE OF CONSERVATISM

There has been a growing tendency, among some groups, to consider certain cases of abdominal injury, notably trauma of the liver and spleen, with shock controlled, as not requiring surgical intervention.

In our limited experience, we feel much safer, in these border-line cases, if we explore. True, you may do nothing after you are in the abdomen and true also that many would do well without surgery. The diagnosis, however, is so many times in doubt; delayed rupture of either hollow or solid viscera is so common and multiple lesions are so frequent, that one had best "sin on the side of right."

We recall, with a great deal of chagrin and unhappiness, several cases, doing well, up and about, only to have sudden pain, severe shock, and in two cases fatal terminations. We recall one subscapular spleen rupture, which we incorrectly diagnosed. The man, on his way to a sanatorium for treatment of a left tuberculous infection, was in a railroad wreck, sustaining multiple rib fractures, principally on the left. He did well on a conservative regime. He was up and about the hospital on his fourteenth day when he had a severe, sudden and fatal bowel hemorrhage. Autopsy revealed rupture of the spleen into the splenic flexure of the colon.

We also recall two children of the same age, in the hospital the same day, both sled accidents and both spleen injuries, one complicated by hematuria, from kidney contusion. Both had completely controlled shock, but both had delayed ruptures and severe hemorrhages. Both of these children had normal spleen shadows on x-ray.

We have had two cases of pseudocysts of the pancreas, developing 14 to 16 days post trauma.

The late sequelae are also distressing. Recently the Mayo Clinic reported two cases of traumatic bile cysts of the liver, both coming to surgery, weeks after the original injury, and one case of submucosal hematoma of the colon, operated upon, years after the causative trauma.

OPTIMUM TIME FOR SURGERY

Even though our diagnosis is relatively certain and laparotomy is definitely indicated, the optimum time for exploration is often most difficult to determine, especially if the case is seen in severe shock.

If response to shock treatment is satisfactory, and pulse and blood pressure remain stabilized for an hour or so, exploration is probably permissible.

If response to treatment is evanescent, and a short period of recovery is followed by a relapse, we must conclude that bleeding is continued and severe and exploration should not be delayed. Blood should be available in adequate quantities and should be running, preferably in two veins, when the incision is made.

If treatment for shock has been adequate, continued and intensive, and no response has been obtained and we are relatively certain that nothing, outside of the abdomen, is responsible for the shock, the case is probably hopeless. These cases are a distinct challenge to the surgeon and require some fortitude, but it is our opinion that often nothing is lost and occasionally a life may be salvaged by exploration.

MULTIPLE LESIONS

We reiterate, one must always be on the alert for multiple lesions. Frequently a severe fracture of the extremity, pelvis or spine, a crushing chest or head injury with unconsciousness can overshadow the abdominal lesion. These are often baffling, because of the pain, spasm and ileus.

Even when one is inside the abdomen, they must be alert for multiple lesions. It is so easy to miss a retroperitoneal duodenal or pancreatic lesion, especially if it occurs with a massive hemorrhage of the spleen, or liver. Multiple lesions occurred in 28 per cent of our cases. They were: (1.) Fractured ribs and ruptured spleen. (2.) Fractured ribs and torn liver. (3.) Fractured ribs and ruptured kidney. (4.) Fractured ribs, vertebrae, pelvis and ruptured bladder. (5.) Ruptured spleen and duodenal tear. (6.) Ruptured epigastric artery and ruptured mesenteric vessel. (7.) Ruptured spleen and kidney contusion, with gross hematuria. (8.) Rupture of liver and kidney contusion, with moderate hematuria. (9.) Fractured ribs, strangulated hiatal hernia and jejunal tear.

The presence of pre-existing pathology. We have encountered few references in the literature concerning the pre-existence of pathological conditions in the traumatic abdomen. It occurred in 31 per cent of our cases. It might be of some interest to briefly enumerate them.

1. An elderly man, reducing his own inguinal hernia in erect position in a small washroom in a cafe, ruptures his own ileum.

2. A man with an empyema of the gallbladder arises from bed to go to the bathroom to emise, turns the wrong way, falls downstairs and sustains multiple fractures, including vertebrae and ribs.

3. A man, defecating with strain, ruptures a sigmoid diverticulitis.

4. A man, with a left sided tuberculosis, on the

way to a sanatorium is in a wreck and fractures his left ribs and spleen.

5. A man, with peptic ulcer, leans over a rear window of a street car to restore the trolley, slips and hits the abdomen sharply rupturing the stomach through ulcer area.

6. A boy, with bilateral polycystic kidney, falls in a corn crib and fractures one kidney.

7. A man, with poorly fitting inguinal truss, is bumped with a tractor and ruptures his ileum.

8. A young man, delivering milk, slips and falls, striking a curb stone, rupturing a chronically enlarged leukaemic spleen.

9. A coal shoveler, falls asleep on the ground between loads. A truck runs over his abdomen, fracturing ribs, herniating bowel into hiatal opening and rupturing jejunum.

10. A baker, pulling a towel off of the wall, bumps his abdomen with his elbow and fractures a large spleen of acute mononucleosis.

Liver Injuries. Statistically, the liver is the most commonly injured intraperitoneal organ. In our small series of 26 cases, collected in the past five years, this has not been true. The spleen was first and the liver second. The liver should be extremely vulnerable, because it is large, fixed and fragile. Injuries may be slight, often escaping detection, or severe, with a complete fracture, hemorrhage and death. We believe conservatism is dangerous. Delayed bleeding does occur and associated lesions are often present, both in adjacent organs and those occurring in the ducts.

Spleen Injuries. Practically everything that has been said regarding liver injuries is also true of spleens. Delayed bleeding is perhaps more common and associated lesions less so. Most constant signs are, localized pain and tenderness in the upper left quadrant, often radiating to the shoulder with occasionally a palpable mass and dullness.

Kidney Injuries. We feel considerably more conservative with regard to kidney injuries. Most frequently they are not emergencies, and only become so if excessive retroperitoneal hemorrhage, increasing shock and peritoneal bulging. Many may be treated conservatively and good terminal results are obtained. We have seen almost miraculous healing in severely damaged kidneys, with non-operative therapy.

Hollow Viscera. Less frequently involved in non-penetrating abdominal injuries than are the solid viscera. When it does occur, it is an abdominal emergency. Waagensteen has wisely pointed out that in dealing with abdominal injuries all diagnostic procedures are directed toward discovering if a hollow viscus is ruptured. While there is considerable disagreement among surgeons as to whether emphasis should be placed on the radical or conservative management of abdominal injuries, all agree that rupture of a hollow viscus is always an emergency.

Stomach. Rupture of a normal stomach is rare. Protection comes from rib arrangement and the fact that it is not normally distended.

Small Intestines. If a complete rupture, diagnosis is less difficult. If bowel contusion, or mesenteric tear, few symptoms until secondary rupture occurs, seven to ten days later. Frequently, no large scale escape of gas, due to the herniation of the mucosa and contraction of the bowel at the site of the injury.

Retro-peritoneal Duodenum. This rupture is always serious, always difficult to diagnose and also to repair. X-ray evidence of air about the right kidney may be helpful. Also, in the absence of thoracic injury, crepitation of air on rectal or vaginal examination is suggestive.

Pancreas. In this small group of cases, we have not seen a single case of severe, primary pancreatic trauma.

I have previously mentioned the case of the ruptured colon, following a defecation strain. In this case there was air beneath the diaphragm, and signs of early peritonitis.

I have also mentioned the traumatic diaphragmatic hernia. The chest X-ray was most helpful in this case.

One case of rather severe intra-peritoneal hemorrhage was due to a rent in the mesentery.

It was most unfortunate that none of the three cases of bladder rupture had cystograms. All were associated with severe pelvic fractures, and all repaired early.

SUMMARY

We have almost reached the conclusion that with abdominal trauma, even in the presence of rib and vertebral fractures, with tenderness, spasm and peritoneal rebound, regardless of a normal pulse, blood pressure and count, the abdomen should be opened and an exploration done. We feel that if we are to err, it is better to err on the side of right. In other words—"it is better to look and see than to wait and see."

CORNPICKER ACCIDENTS OF THE UPPER EXTREMITY*

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AGRICULTURE has always been a hazardous industry. It is a type of work in which a man does multiple types of work with multiple tools, usually with minimal training and no formal instruction or education, no supervision and on a schedule of his own making. As the type of farm tools have changed, so have there been changes in the type of accidents the farmer sustains. In the days of horsepower, the horse was a source of numerous accidents. The horse often threw his

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rider or threw the driver from a vehicle he was pulling. He could trample or kick the farmer, and injure him in other various sundry ways. The horse on the Iowa farm is a thing of the past but the machines that have replaced him have presented new hazards.

Only those who have picked corn by hand and have heard the noise of ear corn on the "bang-board," can truly appreciate the advantages of the mechanical cornpicker. The mechanical cornpicker offers numerous opportunities, however, for injury to the operator. We shall consider some of the upper extremity injuries that occur with the cornpicker.

The power to operate the cornpicker is usually transmitted to the machine from the tractor, that is, pulling it. This transfer is usually accomplished by a spinning power takeoff bar. It is possible for a farmer to get his glove, sleeve, or hand caught on this spinning bar and if so, the entire arm may be rapidly wrapped up about it. The farmer makes a very violent effort to free himself, and sometimes is able to literally tear a finger off in getting free.

The type of injuries sustained by those caught in a power shaft are somewhat typical. There may be multiple metacarpal fractures. There may be a fracture of the midshaft of the ulna, which is quite commonly compound, and two or more fractures of the shaft of the radius. These are often not compound. If the force continues, there may be fractures of the humerus as well. The mechanism of this injury can be continued until the one involved is killed if the motor of the tractor continues to run.

On the cornpicker are numerous gears and chain drives. The most common injury caused by these involves only the fingers or the hand. These injuries usually consist of multiple, compound, comminuted fractures of the phalanges and metacarpals with involvement of the tendons, nerves, and vessels, as well.

In the care of these injuries, the wounds should be meticulously debrided and repaired. The ventral digital nerves, if severed, should be carefully repaired with the smallest sutures and needles available. Extensor tendons should be carefully repaired. If flexor tendons of the fingers are severed, they should be repaired by someone accustomed to such work or left for repair by such a surgeon at a later date. When amputations are present or are necessary, the bone should be resected short enough so that tension free closure is possible with good skin and subcutaneous tissue and the tendons and nerves and vessels excised even shorter than the bone. Good finger stumps are more important than long ones, except in the thumb where maximum length should be preserved.

There are two types of injuries that are peculiar to the cornpicker. There are two sets of rollers in which the operator can become entangled. The snapping rolls are a pair of large rollers set

approximately one-half inch apart through which the cornstalks are pulled. They are set so close together that the ears of corn will not go through, and this is the mechanism by which the ear corn is separated from the stalk. These rollers quite often become clogged with cornstalks, and the farmer has to stop and clean them out. It is easier to leave the machine running so that the power of the rollers helps to clean them out. This is a dangerous practice. All farmers know they should always stop the machine to clean these rollers. If they do, there is no injury. If they do become entangled in these rollers severe injuries can occur.

The snapping rolls cause multiple fractures in the upper extremity, but the most constant thing that is seen is a severe crushing injury of all the parts that pass between the rolls. If the patient is fortunate enough to get his hand out he may have a traumatic amputation of some portion of the hand or forearm. In some cases the entire arm is pulled between the rolls and until the patient's body is wedged against the machine in such a way that the rolls can no longer pull the arm in further. Then the rolls are likely to grind away on the arm at the level at which it stops.

With the severe crushing injury there may be involvement of the major vessels and nerves, perhaps just from compression injury alone.

In the care of these injuries, a good deal of the end result depends upon the treatment given. One of the most important things is to combat the posttraumatic edema. This can be done by keeping the arm as high as possible until the acute edema stage is under control. If there are any open wounds, they should be debrided and carefully treated immediately. All fractures should be cared for carefully. The treatment of the fractures usually can be combined with elevation of the extremity for the control of edema.

Injuries sustained when the upper extremity becomes entangled in the husking rolls of a cornpicker are much more serious. The clearance between these rolls is very narrow, approximately one-fourth inch or less, and usually any part that enters in between the rolls is damaged beyond repair. Because the tissues are damaged severely as they enter these rollers, the patient is quite often able to jerk the hand out, usually with avulsion of the damaged portion.

In repairing such injured extremities it is necessary to make wise and judicious use of the remaining parts. Whenever the index or middle finger is saved, it is wise to fashion well-covered, tapered stumps on the remaining fingers. When the index finger or middle finger is present with intact sensations, it is more important that the remaining stumps on the fingers be good stumps rather than long stumps. In contrast, when the thumb is injured, it is wise to save as much of the length of the thumb as is possible.

Often it is possible to save a stump of hand

that would otherwise be amputated because of skin loss. This can be done by the use of abdominal flaps to cover the distal portion of metacarpals that have been denuded of skin. Often a thumb is denuded of part or all of its skin and free split grafts or pedicle grafts applied at the time of the original debridement will save a thumb that would otherwise be amputated.

Amputations of the hand or arm are sometimes mandatory due to the severity of the injury. If there is question regarding amputation, delay with elevation of the extremity and careful supportive therapy will answer the question and may save extremities or parts of extremities that might be otherwise amputated.

CASE REPORT F.O.: A 27 year old white, American farmer, residing in Iowa, was working on November 25, 1946, with a cornpicker. He attempted to clean out the snapping rolls while the machine was running and his hand became entangled. His right arm was pulled into the machine until the moving rollers were grinding away at the chest wall. At that time, the load on the motor was such that it stalled. He was held in the machine for about 30 minutes before someone happened by and he could obtain help. The machine had to be taken apart to release him. He was taken to his family physician, who bandaged his arm, gave him several hypodermics for the relief of pain, and sent him on to the hospital by ambulance.

When he was first examined at the hospital by this author he was found to be in mild shock and having a good deal of pain in his right upper extremity. There was severe bruising of the skin over the anterior chest and particularly in the anterior axillary fold. In this latter region was a rather large hematoma, measuring about 3 inches in diameter. There was severe contusing of all of the soft parts of the right upper extremity. The nail of the middle finger was avulsed and there was a puncture wound on the dorsum of the hand, thus compounding fractures of the mid-shaft of the index and middle finger metacarpals. There was a simple fracture of the ulna at the junction of the middle and upper thirds, and a chip fracture of the greater multangular. No fractures were found in the radius or the humerus.

There was rather severe swelling of the entire upper extremity, inability to move the fingers, and loss of sensation from the elbow distally. No pulse was found distal to the shoulder, but skin color was fairly satisfactory. The blood pressure was normal, and pulse and temperature and respirations were essentially normal.

The wounds were debrided and dressed, and a complete pressure dressing was carefully applied to the entire right upper extremity. A Kirschner wire was put through the index and middle finger metacarpal heads, and with this the arm was suspended above the patient as high as pos-

sible. This position was maintained by balancing weights.

The following day a radial pulse was palpable. On the second day there was beginning recession of the edema in the arm and hand. Multiple blebs on the skin were breaking and beginning to dry. By the eleventh day, the swelling had subsided enough so that the arm was taken out of overhead traction, and a splint applied to hold the fractures. The patient was then allowed to keep his hand down part of the time but elevation was maintained most of the time. By this time partial return of sensation in the ulnar and radial distribution was noted, but there was no median nerve sensation. Paralysis below the elbow continued, but by the fifteenth day he was beginning to have some action in his triceps and biceps muscles.

This patient's progress continued, and he was allowed to leave the hospital on the eighteenth day following his injury. He was followed periodically. Slowly the nerves recovered until there was a complete recovery of all sensations and all motor power. Two years following his accident there was an excellent result in all respects, except for a contracture of the thumb web. He was operated upon at this time, and a plastic procedure done to loosen up his thumb web. This improved the use of his thumb considerably.

This man was checked four years after his accident and found to have a normal right upper extremity except for the lack of a few degrees of complete extension in the fingers, and some mild persistent tightness in the thumb web. However, he is able to grasp the examiner's wrist easily and the power of his grip is normal.

THE USE OF CONDITIONED REFLEX AND ANTABUSE IN THE THERAPY OF ALCOHOLISM*

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The problem of alcohol has been present since the beginning of time. Bacchus, whom Greek mythology credits with discovering the effects of alcohol, had his devoted adherents but there were also many who tried to destroy him and his religious rites. Changed cultural standards not only condone the social use of alcohol, but also make it easy to obtain alcohol in any form. As a result of these changed conditions, the individual who seeks relief from his everyday cares or his own personality problems, learns early in life that he can get relief from these distressing situations by doing something that is

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socially acceptable. The reasons people drink and more particularly the reasons they drink excessively are many;¹ and conversely the treatments offered for the control of excessive drinking are just as varied. Drugs, psychotherapy and Alcoholics Anonymous are all used effectively in the treatment of alcoholism.

The use of drugs to produce an aversion, either by conditioning the individual so that the sight, taste or smell of alcohol is objectionable to them, or by using a drug that will make the individual ill if alcohol in any form is taken, has been used extensively. Psychotherapy has been attempted in order to study the conflicts of the patient and by means of this to determine why they drink. Alcoholics Anonymous, by utilizing group therapy, a feeling of belonging, a sympathetic understanding and a willingness to lend a helping hand, has been successful in some situations. The diversification of the attack, however, demonstrates that there is no one cure for alcoholism and that the various procedures outlined above may all prove unsuccessful due to unresolved emotional conflicts. In this paper, we will discuss the conditioned reflex therapy for alcoholism and the use of Antabuse to control drinking.

The conditioned reflex therapy for alcoholism was started in 1940 by Dr. Lemere and Dr. Voegtlin^{2, 3, 4}. The basis principle makes use of Pavlov's conditioning process in that an emetic is given which produces nausea in the patient. At the same time whiskey, beer or wine is given the patient and as the nausea is produced, the patient feels it is due to the whiskey, beer or wine. This results in conditioning the patient so that the sight, taste or smell of whiskey, beer or wine produce nausea. In carrying out the formal procedure, the patient is seated comfortably in a chair and an array of whiskey, beer or wine, etc. are highlighted directly in front of the patient. He is then given two ten-ounce glasses filled with a solution of lukewarm water, one Gm. of sodium chloride, and one and one-half grains of emetine hydrochloride. He is told to drink this and after he is finished he is given a hypodermic injection containing emetine hydrochloride, pilocarpine and ephedrine. Following this the patient's problems are discussed with him for four or five minutes because it takes this long for the above mentioned hypodermic injection to become effective. At the end of this time he begins to perspire freely and he is then given two ounces of whiskey. He smells, sips and tastes this and this is then followed by two more ounces of whiskey. Following this, two ten-ounce glasses containing two ounces of whiskey and six ounces of lukewarm water are given to the patient. At this time the patient begins to have nausea and usually emesis. The same procedure is followed with the exception that beer, wine or both are given and this entire procedure

is continued for about 15 to 20 minutes. It is essential that the patient emese everything that is given him and if he is unable to get rid of what he has taken, his stomach should be lavaged. This entire procedure is repeated on five different occasions over a ten day period. At the same time the patient's problems are discussed with him and superficial psychotherapy is given and an attempt is made to solve some of the minor conflicts of the patient. At the end of the ten day period or when the patient completes the first five treatments he is advised to return to the hospital in one month's time for two additional treatments. This is done to further enhance the aversion to alcohol and to produce a more lasting affect. In certain instances he is advised to return again in three months and again in six months. If the individual follows these suggestions the chances of his being completely cured are much better because the aversion then lasts much longer. The results of this treatment have been successful in selected patients. In 547 cases treated, we have had 65 per cent with total abstinence for a variable period of time for six months to eight years. Of the total number of patients treated, approximately five per cent have returned for a second course of treatment after they have been abstinent for a variable period but started drinking again and felt that they had been helped so much that they returned voluntarily to complete a second course and this was usually quite successful. This treatment has no beneficial affect in the mild mental disorders or the psychopathic personalities. In patients where there are no deep seated psychotic problems and where the individuals adjustment to his life has been partially satisfactory, it is successful. The contraindications to the use of conditioned reflex therapy are, active gastric or duodenal ulcers, or severe cardiac disease of any type.

Tetraethylthiuram disulphide, or Antabuse, was first used in the treatment of chronic alcoholism by Jacobsen^{6, 7} and his collaborators in Denmark in 1948. They found that after taking Antabuse for a period of time that the ingestion of a small amount of alcohol made the patient so ill that with the continued use of Antabuse they refused to take any form of alcohol, knowing what the results would be. Since that time Antabuse has been used extensively, but because of the severe reaction it is still controlled and is sold by only one drug house in the United States, and they insist that it must be used in a hospital devoted to the care of alcoholics and that definite tests be performed before any treatment is given. Antabuse taken by itself produces no untoward effects and when taken in two or three gram doses, gives no symptoms except fatigue or drowsiness. In our procedure, the patient is studied thoroughly before any attempt is made to treat him. He is given a complete physical and neurological ex-

amination and a complete blood count, urinalysis, blood serology, glucose tolerance test, blood sugar, blood urea nitrogen, basal metabolic rate, electrocardiogram and blood acetaldehyd. If the results of these tests are within normal limits, the following procedure is begun: He is given two Gm. the first day at bed time to obviate any tendency toward drowsiness. The second evening he is given 1.5 Gm., 1 Gm. the third day, .75 Gm. the fourth day, and then this is continued until the patient leaves the hospital, at which time it is reduced to .5 Gm. After the fifth day, the patient without breakfast, is given his first test run of alcohol. The pulse, blood pressure and respirations are checked at intervals of five minutes. Three to four minutes after the ingestion of whiskey, the patient has definite flushing of the face and conjunctiva. He begins to complain of headache and says he feels sleepy. Fifteen cc. of whiskey are repeated in five minutes and within ten to 15 minutes the blood pressure usually begins to drop and the pulse becomes elevated. The whiskey is repeated and 15 cc. of whiskey are given in 15 minutes until a total of 45 cc. of whiskey are given over a period of 45 minutes. The most constant complaint heard from all patients is that, "this feels like the worst hangover I ever had." The second most common complaint is a severe headache described as a throbbing pounding type of headache. Some patients complain of tightness of the chest, nausea and vomiting. These symptoms all persist for about one to two hours and then gradually subside. The patient, however, is usually fatigued and wants to rest in bed the remainder of the day. The tests are repeated on the eighth and twelfth day and the patient is advised to return in one month's time for a further test. Where it is feasible, these patients are seen at weekly intervals in the office for superficial psychotherapy and an attempt is made to solve some of their minor problems. When they leave the hospital they are placed on a maintenance dose of Antabuse, .5 Gm. daily. The contraindications to the use of Antabuse are: (1.) coronary disease or any type of myocardial disease, (2.) hyperthyroidism, (3.) cirrhosis of the liver, (4.) nephritis, (5.) diabetes mellitus, (6.) pregnancy, (7.) epilepsy and (8.) mild mental deterioration due to alcoholism or patients who do not have the ability or judgment to understand what the dangers are if they take alcohol in any form while taking Antabuse. This is important because of the severity of the reactions that occur in individuals who do not fully comprehend the dangers of what happens to patients who take alcohol. In addition to this, all patients receive a card to carry and this card advises that in case

of an accident or injury that they are taking Antabuse and should not be given alcohol in any form. Of the 14 cases treated with Antabuse, two have discontinued taking the drug and have started drinking again. One of these is a female patient who has been a behavior problem for many years and could be classified as a psychopathic personality. The other patient is a man who refused to take the drug after having a rather severe reaction and as a result began drinking after a short period of time at home. Of the remaining 12, all have remained abstinent and are continuing to take the drug regularly. We receive reports, both from them and their families, or some responsible friend at monthly intervals. Where, as stated previously, it is feasible, these patients are seen at intervals of two weeks to a month in the office and psychotherapy on a superficial level is given.

No attempt is made to compare the use of conditioned reflex and Antabuse. Each of these have a definite place in the therapy of alcoholism.⁸ The conditioned reflex treatments can be given to a greater number of individuals because there are fewer contraindications and the individual is not in any danger if he does begin drinking. He may become nauseated and it may require a definite effort on the part of the patient to be able to drink again. With Antabuse, however, there is a definite danger if he does drink because these reactions following the ingestion of even small amounts of alcohol are violent and it is the consensus of opinion of those who have used the drug that it should be used only in a hospital where the personnel is acquainted with this specific problem and with the handling of physical and psychiatric emergencies.

In summary, I feel that Antabuse and condition reflex both have a definite place in the therapy of alcoholism but that you must be much more selective in the patients who are given Antabuse. The judicious use of both of these procedures have a definite place in the therapy of alcoholism.

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PHYSIOLOGY OF THE CONJUNCTIVAL SAC*

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THIS PAPER is probably not well named, it is a clinical discussion, not an ultra-scientific report of research on such a subject as the exchange of metabolic by-products from the surface of the cornea and conjunctiva with the air. I want merely to remind you of the normal goings-on and sensations of the surface of the eye, because I have found that the understanding of such physiology of the normal conjunctival sac has enabled me to account for many clinical complaints, and, if I understand, I can better make the patient understand, and the patient's understanding is essential to the treatment of psychosomatic complaints.

"My eyes burn all the time," says the young file clerk or comptometer operator. "Terribly," is added half the time, showing how much the cerebral cortex has concentrated on the symptom. The patient's eyes are white, the refraction normal, and the extrinsic muscle balance and ductions normal. It is not sufficient, usually, so to report to the patient and to dismiss him, any more than it is sufficient to report to a patient with "indigestion" that his gastric X-ray shows nothing abnormal. The patient *knows* there is something wrong.

Of course, all eyes burn all the time. The sensation which we call "burn," "smart," "sting," "scratch" or whatever synonym is used, is the normal afferent stimulus from the surface of the cornea to the brain, reporting that the cornea is dry and that the wink is due. It is our protective pain. This can be demonstrated easily by asking the patient to stare fixedly at any object without blinking; the burning becomes more intense until a violent wink accompanied by tearing becomes a necessity. So this young clerk, or any young graduate, entering an office to work for the first time, eager, staring, straining to make no errors, fails to respond with a normal blink until his eyes burn "terribly," and water. He becomes convinced, then, that something is wrong with his eyes. Actually they are reacting normally and protecting him from a dry, damaged cornea such as that which follows a nerve severing operation for trifacial neuralgia, when the eyes do not burn.

This "burning" is the movie and television problem. Those of us who have seen many movies can look at them with mild interest and no straining. Not so the eight year old whose Saturday expedition to see "Hop-a-long" is the event of the week, and who will not blink for fear of missing a motion of his hero. But if he does not blink the cornea becomes dry because of evaporation, and his eyes "burn." Television is new. When it becomes an old story adults will be able to watch it with a "take it or leave it alone" attitude, and will

see it just as well as if, like the eight year old, they sat staring for fear of missing a forward pass or a left cross.

Smoking adds to the difficulty. Not only does each smoke particle absorb a little moisture and hurry the normal drying, but it is an irritating foreign body which sends its message of burn to the brain stem asking for removal. Dusts of all sorts add their bit to the burn. A sunbeam in the living room reveals a dancing array of housedust; some of those particles will inevitably fall in the eye, and all of those particles are dry.

Many fumes and gases produce a similar burning sensation when coming in contact with the conjunctival sac, even though they produce no destruction of tissue. I recently saw an office worker who was worried about her eyes. They proved to be normal in every respect, but questioning brought out the fact that her office was located on the second floor of a trucking firm, and that diesel trucks, pouring out their fumes, ran into and out of the first floor garage all day long.

Since this is not a discussion of diseased conditions, and I do not wish to enter the abnormal field, I hesitate to mention the allergic reactions that many persons have when their special dust is present. I would classify their problem as pathological rather than physiological, because they have an altered tissue response visible on inspection. Of course here the line is fine, and must be crossed in discussing the problem with the patient. I find that the added symptom of itching is usually described by those patients who are specifically sensitive in an allergic fashion.

So, we who live in a dusty, smoky world, where relative humidity is often low, can expect to find our eyes burning. But the normal burn-wink-tear reflex should not enter the conscious level, and there lies the reason for the patient's visit to us, and the use of the word "terribly" in describing the symptoms. As soon as the conscious mind makes itself aware of the reflex, the reflex becomes disagreeable and magnified, and then the vicious circle of pain-worry develops. These patients need reassurance. It is not sufficient to tell them that their eyes are normal; it is necessary to explain why their symptoms are present. This explanation is just as important too, when glasses are prescribed, because dry, dusty, smoky air gets behind the best fitted lenses, and, if the patient's symptoms continue after he has worn his glasses, it is difficult to reassure him later; he usually wanders to someone else, thinking that there is something wrong with his glasses.

You are all familiar with the patient who is sure he needs glasses, no matter what you tell him, and there are those who seem disappointed that their "burning" is not a symptom of a serious malady, but I have found that any intelligent person can understand these facts of physiology that I have given you, and that as soon as he realizes that the symptoms he has experienced and has

* Presented at the One Hundredth Meeting, Iowa State Medical Society, Sioux City, April 23-25, 1951.

been disturbed about are a part of normal, modern living that he need not be worried by, he loses his fear and, consequently, the "terrible" pain. His burn-wink-tear reflex sinks down below the conscious level.

I want to finish with a suggestion which I feel is important to the comfortable eye, and also to the comfortable nose and throat. I was led to this suggestion during my duty at Pensacola. In that hot, moist climate I received many complaints of dry mucus, difficult to dislodge from nose and throat. I noticed symptoms of dehydration produced by the excessive perspiration and failure to drink enough water. I prescribed more water drinking; the treatment was effective; and I decided that, if the mucus membranes of the nose and throat do not have sufficient moisture, it follows that there may also be insufficient water for tears to wash out the daily accumulation of dirt. Advice to the patient to drink more water may help him greatly in keeping his eyes comfortable. Does this suggestion contribute to the treatment of conjunctivitis sicca?

DISCUSSION

Carl A. Noe, M.D., Cedar Rapids: I believe Dr. Dean is presented a logical explanation for a common complaint. Most of us have come to regard burning or smarting of the eyes in the absence of findings of irritation or infection as an ocular neurosis. Refractive error probably plays a much lesser part in the causation of burning of the eye than used to be believed. As Dr. Dean has mentioned, some patients believe so firmly that they need glasses, that nothing else will do, and, probably, the relief that they obtain belongs more into the psychic realm. A few of our patients with this complaint who have shown what appeared to be normal tear secretion by the Schirmer test have been happier when they have used "artificial tears." We have used the formula advocated by Sanford Gifford several years ago consisting of an electrolyte solution isotonic with normal lacrimal fluid plus gelatin. Lately we have used a solution which contains metacyl instead of gelatin, with apparently the same results. Perhaps these solutions diminish the drying of which Dr. Dean speaks. Riboflavin and Vitamin A deficiency has also been blamed for the symptoms of burning eyes, even when they appear grossly normal. Slit lamp examination of the limbal vessels may be of help in Riboflavin deficiency. However, administration of these vitamins has not been successful in our cases. Dr. Dean's approach to the problem is certainly well worth trying.

NORTH CENTRAL MEDICAL CONFERENCE

The annual North Central Medical Conference will be held November 11 at the Radisson Hotel in Minneapolis, Minn. Dr. Fred Sternagel, West Des Moines, President of the Conference, will preside and will speak on the subject, "What Price Security." Other topics to be discussed include: "Human Relations-Public Relations"; "Your AMA"; "Legislative Outlook for 1952"; "Growth of Pre-Paid Medical Care Plans" and "Are Grievance Committees Serving Their Purpose?"

State University of Iowa
College of Medicine

CLINICAL PATHOLOGIC CONFERENCE

September 26, 1951

SUMMARY OF CLINICAL RECORD

This three year old American Indian girl was admitted to the University Hospital with a history of nocturnal fever, protruding abdomen and diarrhea occurring periodically for one and one-half years. The patient was the product of a normal fifth pregnancy. The birth was at term and delivery was spontaneous. The neonatal period was normal. Early feeding, growth and development were normal. Past illnesses included measles. The patient had been immunized against pertussis and diphtheria.

The mother noted that 18 months prior to admission the child often had four or five loose, watery, foul-smelling stools a day. The skin felt feverish to touch at night; the abdomen, extremities and eyelids became edematous and there was pallor to the skin. A dry, scaling skin eruption was also noted along with listlessness and irritability. Shortly after the onset of the illness, the child was hospitalized in two different hospitals for a total of 11 months. The patient was discharged with little or no improvement, and a celiac type diet was recommended.

In the following months the patient's previous symptoms persisted. She began to lose weight and developed a dry cough and frequent attacks of dyspnea. The child was placed in another hospital for two and one-half months before admission here. She was treated for a diffuse pneumonitis which partially cleared roentgenographically with the use of antibiotics. No definite diagnosis was made, but the stools and duodenal juices were reputed to show tryptic activity; no excessive fat was present in the stools. A guinea pig inoculation of the gastric washings was negative for tuberculosis, and a histoplasmin skin test was negative.

Upon admission physical examination revealed a chronically ill, pale, malnourished child. The body temperature was 100.4° F., respirations were 32 per minute and not labored, and pulse was 100 per minute. The weight was 25¾ pounds, the height was 34½ inches, the head circumference was 49 cm. The weight corresponded to that of a normal one and one half year old child and the height to that of a two year old child. There were several small, seborrheic areas scattered over the scalp. The skin was hot and moist. The tonsils were slightly hypertrophied, but not inflamed. All of the lymph glands were slightly enlarged, firm, freely movable and non-tender. The chest was resonant to percussion and a few coarse rales were heard over the right apex posteriorly. The breath sounds were tubular in character. The

abdomen was moderately distended and a fluid wave was not definitely elicited. The liver was palpated seven centimeters below the right costal margin. The spleen was palpated three cm. below the left costal margin.

The following laboratory studies were made: Blood—hemoglobin value 9.0 mg. per 100 ml., red blood cell count, 4,000,000 per cu. mm., white blood cell count 6,500 per cu. mm.; peripheral blood smear showed 76 polymorphonuclear leukocytes and 24 lymphocytes, 202,000 platelets, bleeding time three minutes, coagulation time five minutes, prothrombin time 34.3 seconds (control 36.9 seconds), clot retraction complete. Hemolysis of the red blood cells began at 0.44 per cent and was complete at 0.32 per cent saline; hematocrit 38 per cent, erythrocyte sedimentation rate (Westergren) 28 mm. per hour, reticulocytes 3.5 per cent. Glucose tolerance curve reported a fasting blood sugar of 65 mg., 105 mg. in 40 minutes and 68 mg. in 120 minutes. Cholesterol, 190 mg. with esters at 45 per cent; bilirubin 0.17 mg. in one minute and 0.3 mg. in 30 minutes; non-protein nitrogen 42 mg. per 100 ml.; total blood proteins 5.9 Gm. per 100 ml. with an albumin of 2.8 Gm.; fibrinogen 0.2 Gm.; globulin 2.9 Gm.; total lipids 721 mg.; lecithin 271 mg. Stool—Cultures negative for pathogens; total fat 5.2 per cent; tryptic activity 4+ in all dilutions on two examinations. Repeated urinalyses were negative on chemical and microscopic examination. Blood Kolmer and Kline tests were negative; tuberculin skin test using purified protein derivative, PPD#2, was questionably positive in 48 hours on two occasions. Bone marrow biopsy showed moderate erythroid hyperplasia. Roentgenogram of the chest showed linear and nodular infiltrations present throughout both lung fields with evident thickening of pleura bilaterally. Roentgenogram of the skull showed areas of rarefaction present throughout the calvarium and those of the long bones were interpreted as being normal.

The patient was treated with a midline depth dose totalling 735 roentgens to the lung fields. In addition, 1.2 mg. of nitrogen mustard was given in 100 cc. saline intravenously for four days. The patient was also treated with penicillin for bronchopneumonia which developed after therapy was completed; the pneumonia responded well to penicillin. The patient was discharged after two and one-half months, slightly improved.

The child was rehospitalized about six weeks later. In the interim she had gained two pounds in weight, but her general condition was somewhat worse. Physical examination revealed a temperature of 101.4° F.; respirations 28 per minute, pulse 100 per minute. Examination was essentially unchanged except for increased pallor and slight icterus of the skin. There was no significant change in the laboratory findings nor in the roentgenographic examinations.

Over a period of four days, the patient received

a total of 500 roentgens to the chest. Therapy was discontinued because of her poor general condition. She developed extreme dyspnea, a daily rise in body temperature to 104° F. and the patient expired 39 days after rehospitalization.

Abstracted by John W. Berg, M.D.

CLINICAL DISCUSSION

Dr. Philip C. Jeans, Pediatrics: Dr. Gillies will show the X-rays first.

Dr. Carl L. Gillies, Radiology: The skull films of this child showed sharply circumscribed areas of

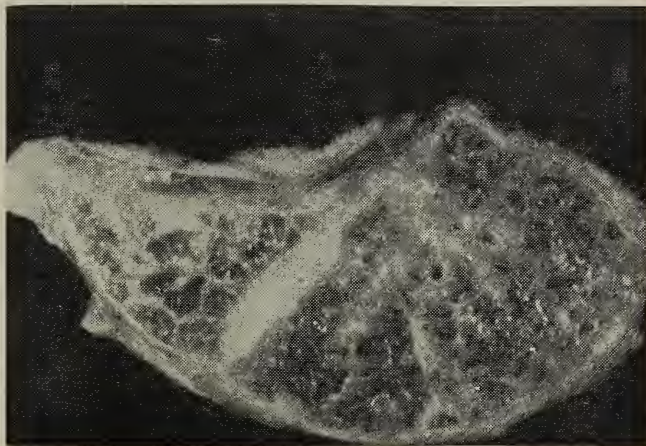


FIGURE 1. Cross section showing fibrosis of lung and pleura.

rarefaction which were felt to involve the external and internal tables. The sella tursica appeared entirely normal, showing no erosion. There was no evidence of erosion around the orbits either. The film of the chest showed diffuse infiltrations rather uniformly involving both lungs.

I think neither the infiltrations in the lungs nor the rarefaction in the skull is entirely characteristic, but take the two together and the diagnosis should be obvious.

Dr. Jeans: May we hear the students' opinion now?

Dr. George Bedell, Medicine: The students' diagnoses this morning included the lipid dystrophies, meaning Gaucher's disease, Letterer Siwe's and Hand-Schuller-Christian's disease. They also included fibrocystic disease of the pancreas, Hodgkin's disease or lymphoma and tuberculosis which was a poor fourth.

Student: We also mentioned histoplasmosis.

Dr. Jeans: As Dr. Gillies stated, the diagnosis is obvious when the films are examined. However, when the child first came under observation, we had no films and a number of possibilities had to be considered. Fibrocystic disease of the pancreas was considered because of the frequent foul stools over a rather long period. One of the first things to do in such circumstances is to determine the tryptic activity of the stools or of the duodenal content. Repeated examination of the stools showed good tryptic activity in all dilutions. This

finding was considered to exclude the diagnosis of fibrocystic disease.

Dr. Richard D. Eckhardt, Medicine: What is the quantitative thing that excludes it? In a previous conference tryptic activity was reported for a patient who had the diagnosis of fibrocystic disease.

Dr. Jeans: Early in fibrocystic disease one may find moderate tryptic activity; it may be present in the lower dilutions, but usually not in the higher dilutions. In such instances, as the disease progresses, tryptic activity disappears entirely.

Another condition that was considered was non-tropical sprue or celiac disease. Examination of the stools seemed to exclude this diagnosis. The amount of fat in the stools was normal. Also, there was the story that before coming here she had received a so-called celiac diet with no benefit.

The possibility of Gaucher's disease has been mentioned. Several features in this patient might suggest this condition; namely, enlargement of the liver and spleen, general adenopathy, occasional bouts of moderate fever and normal blood lipids. These findings are more or less in common with those of the condition we have in this girl. However, in Gaucher's disease one expects to get some bone changes eventually which are more or less characteristic; these were lacking in this patient. Also the bone marrow was normal except for moderate erythroid hyperplasia; no Gaucher cells were observed.

After the child had been here for several days, the report was received from radiology as to the films of the skull and lungs; the diagnosis was then definitely made. Although certain other laboratory examinations were made to complete the record, no further search was necessary for diagnosis. The clinical diagnosis is Hand-Schuller-Christian disease. The other changes shown by this girl were compatible with this diagnosis; the liver and spleen enlargement, the generalized moderate adenopathy and the fever and normal blood lipids. There was slight liver damage in this child, but apparently not much. Certain other findings were not so much a part of the disease as a part of the chronic illness, such as low blood protein and low blood albumin. These can be a part of any chronic illness.

Dr. Bernard I. Lewis, Medicine: How about the value of diabetes insipidus and exophthalmus accompanying this disease?

Dr. Jeans: A triad may occur in this condition which includes the two conditions you mentioned along with the bone defects. The occurrence of this triad is relatively uncommon, at least so far as my own experience goes. The triad is not necessary to make the diagnosis. The situation suggests the Hutchinson's triad in the diagnosis of congenital syphilis; one rarely sees it.

Dr. Henry E. Hamilton, Medicine: How do these bone changes differ from those of multiple myeloma from the X-ray standpoint?

Dr. Gillies: The first consideration that I would give in differential diagnosis is the age of the patient. Multiple myeloma is a disease primarily of adults and elderly people. While the typical multiple lesions of myeloma and the typical large areas of rarefaction in Hand-Schuller-Christian syndrome are fairly specific, in many instances it is doubtful if a single small lesion of the skull would be diagnostic in either condition. In this instance, however, the age of the patient, the skull lesions and the pulmonary infiltrations all fit the picture of Hand-Schuller-Christian syndrome.

Dr. Jeans: Dr. Stamler will now give us the pathologic findings.

Dr. Frederick W. Stamler, Pathology: The principle disease process demonstrated at autopsy consisted of widespread lesions of a granulomatous nature involving many organs of the body. These lesions were found in the liver and spleen, in the lymph nodes, in the lungs and pleura, bone marrow, skull, choroid plexus of the brain and posterior lobe of the pituitary gland. A characteristic feature of these lesions was the presence of many large lipid-filled phagocytes of the reticuloendothelial system. Another feature which was found in many of the lesions was extensive fibrosis. This was unusually prominent in the pulmonary lesions so that it is likely that the child died of pulmonary insufficiency as a result of an extensive pulmonary fibrosis and pneumonitis. In addition to the involvement of the lungs proper, there was an organizing fibrinous pleuritis with bilateral pleural effusion and tremendous thickening of the pleurae. There was a small pericardial effusion, and probably as a terminal event, there was a small mural thrombus of the left cardiac auricle. The patient was noted to be mildly icteric.

Histologically, as well as clinically, this does fit the general picture described and categorized as Hand-Schuller-Christian disease; although, as has been mentioned, it does not exactly fit the original concept with the triad of diabetes insipidus, exophthalmos and multiple defects to membranous bones. However, this concept has been broadened to include many cases that appear to exemplify the fundamental nature of the disease without all the exact findings which were originally described, so that this case is included in that category. It might be appropriate to attempt to explain a little more about the disease from a pathological standpoint.

Hand wrote his report in 1895, and at that time thought the disease he was describing was probably an atypical form of tuberculosis. Some 25 years later it was described in the reports of other authors and included in the present category. The concept then was that this represented a type of lipid metabolic disease or xanthomatosis. It was included with Gaucher's disease and Niemann-Pick's disease and certain of the other entities which are still accepted as belonging in that class. It was later recognized that most of the cases clini-

cally did not show any disturbance of lipid metabolism. The total blood lipid levels and all components of blood lipids were essentially normal in most instances, although in some cases abnormal levels had been reported. Analysis of the diseased tissue itself did characteristically show rather high lipid content, particularly cholesterol and certain cholesterol esters. So there is still that evidence that it might be a disease of lipid storage.

The more popular present day concept is that it should be classed rather as a primary disease of the reticuloendothelial system with lipid storage as one of the secondary manifestations. At present it is sometimes called reticuloendotheliosis or reticuloendothelial granuloma. There is little knowledge regarding the etiology of the disease, so we still retain the name of Hand-Schuller-Christian disease and probably will until we have more precise knowledge regarding the etiology and exact nature of the disturbance.

Dr. Jeans: Dr. Tidrick will discuss this condition in relation to certain other closely allied conditions.

Dr. Robert T. Tidrick, Surgery: The description that Dr. Stamler has just given in terms of present concepts of the lesions here, I think, is as lucid and condensed as it possibly can be. His statements in relation to how this particular entity or group of entities fit in with the other so-called lipid storage diseases is quite clear.

One really cannot add a whole lot except to reminisce in terms of some of the mistakes we are likely to make in terms of diagnosis, particularly if we do not realize how extremely varied these lesions may be. At the danger of recapitulating a little too much, touching on some of the things Dr. Stamler has just said, I think we might start with a few generalizations.

First, the unfortunate nature of the terms that are employed. The term "lipoid dystrophy" which I heard employed early in this discussion is an unfortunate misnomer. Oftener than not lipid is not involved, and it should not be called a dystrophy. The lesions that are particularly gaudy and which frequently come to the early attention of the radiologist, the orthopedist, the surgeon, etc. involve the skeletal system. I would not want you to get the idea at all that they are all confined to that system of the body. Dr. Nomland, I am sure, would fiercely protest that concept and will talk some about the problems presented in the practice of dermatology.

The second generalization that we might make about this whole loosely connected group of lesions has to do with age and prognosis. It would appear that lesions of this type which involve infants carry a very poor prognosis. They run a rapid course, they simulate malignant neoplasm closely and in some instances, though the pathologists may disagree, they are undistinguishable from malignant neoplasm. I am thinking of one patient upon Dr. Stamler performed an autopsy

several years ago in which you would be unable to tell for sure whether it was a so-called Letterer-Siwe's disease or a malignant tumor, for Letterer-Siwe's disease in an infant may behave exactly like a malignant neoplasm. As one goes from infancy to childhood, the prognosis for duration of life is better and the prognosis for recovery in some is better. As one goes from childhood to adulthood, seemingly those that occur in ado-

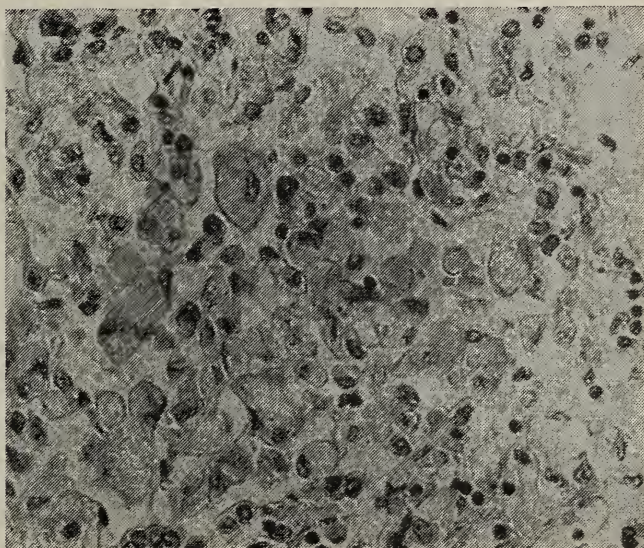


FIGURE 2. Lipid-filled reticuloendothelial phagocytes filling pulmonary alveoli.

lescence or young adulthood are often associated with many manifestations of the disease and carry a guarded to fair prognosis with considerable tendency to spontaneous healing. As one goes on into middle life, and so far none have been observed occurring primarily in old age to my knowledge, the prognosis is good and the chances are that the patient will only have one manifestation of the disease. It may commonly be seen in the skeleton, less commonly in some soft tissues. The link which knit much of this together was interest in one particular lesion called eosinophilic granuloma which had been described in the 1920's and even possibly before that, but had not been given an appropriate title which could be carried in the *Cumulative Index*, so the scattered reports that were present about it did not get put together until, I think, Green and Farber of Boston about nine years ago finally did succeed in tying it up with the so-called entity that we are referring to here today as Hand-Schuller-Christian disease.

Eosinophilic granuloma is a destructive process that can be in single or multiple sites in the skeleton, generally in children or adolescents who complain, as a rule, of pain and often have swelling and a little fever of a few weeks' duration and which in some of them may lead to fracture or diagnosis of infection and finally be followed by spontaneous healing. It was not noticed for a long time that some of the patients went on and developed the other lesions we have referred to, dia-

betes insipidus, sometimes skin lesions, and occasionally other lesions in the skeleton. I think it would be appropriate to show these skeletal films.

This is a nine month old infant who was on the Pediatric service a number of years ago with this enormous area of destruction in the upper humerus and a slightly smaller similar lesion in the upper femur. The child rapidly went downhill and died. At biopsy the lesion was that of a peculiar process. At the time everyone who saw it was

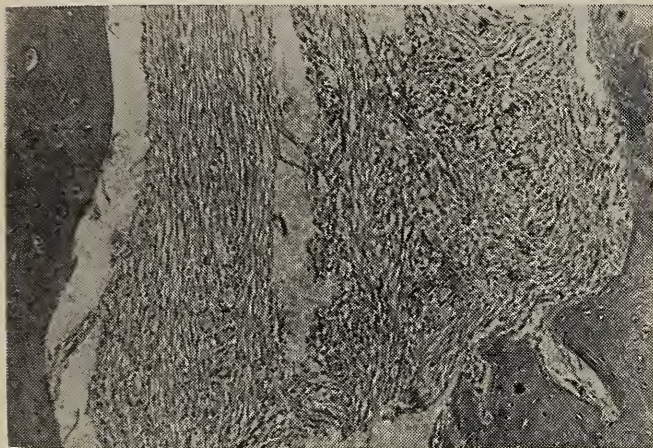


FIGURE 3. Cranial marrow replaced by fibrous tissue containing lipid-filled phagocytes.

quite puzzled. No appropriate "handle" could be put on it. It behaved like neoplasm in that it brought about the infant's death in fairly short order. Unfortunately it died elsewhere and we did not get an autopsy.

Dr. Warner saw a puzzling patient with a similar lesion and similar outcome. Then one or two children a little older were observed here. They happened to survive longer and developed the things Dr. Gillies had described; pulmonary infiltration, skull lesions and scalp lesions. It appeared that there was a relationship. These first two have been called Letterer-Siwe's disease. I do not think one can draw a sharp line between them and those latter ones which survived a little longer. I think the main difference in behavior of it is the appearance of the disorder when it attacks the young infant. The pediatrician may be in very violent disagreement.

Another patient was sent to Dr. Nomland with the question of whether or not he might have sarcoidosis. There was a destructive lesion of one tibial tubercle. In three years' time it spontaneously healed. He had punched out lesions in the phalanges that made one think of sarcoidosis. In time he also developed a cough and a radiogram of the chest revealed an infiltrate in the pulmonary fields. In recutting some biopsies of the tibial tubercle, a small area was seen which appeared to be like the lesions we have shown, particularly the one in the femur, and it was seen that it was an eosinophilic granuloma. That was the first lesion to occur in the patient. Over the course of many

years he developed lesions not only in the phalanges and tibial tubercle, but patella, the femoral shaft, pulmonary infiltration, etc., and then over the course of five to six years these spontaneously healed. Up to that time such lesions as we had seen were called xanthoma of bone because often there were scattered foam-filled phagocytes. I believe this patient did have a little X-ray therapy which seemed to be beneficial.

Dr. Ruben Nomland, Dermatology: We have seen two cases of Schuller-Christian disease with skin eruptions. These were in the nature of a non-specific type of seborrheic dermatitis with presence of a greasy, scaling eruption of the scalp and scattered lesions on the body. Biopsy was performed on these, and we did not at first appreciate the significance of certain peculiar round cells in the sections. Dr. Ponsetti, I believe, looked at these sections and noted the similarity to these cells to some of those seen elsewhere in the disease.

You will note from the history that this baby had what is described as a seborrhea-like dermatitis which was noted by the mother fairly early in the course of the disease and was present at the time the child was seen at the hospital. Unfortunately, when the baby was referred to the Dermatology Department it was seen only by a resident who did not appreciate that the mild follicular nondescript dermatitis could be part of the Schuller-Christian syndrome, and consequently no biopsy was performed. It would seem that a poorly defined, seborrhea-like eruption is often present in Schuller-Christian disease.

Dr. Tidrick brought up the question of sarcoid in referring to the bone lesions. The bone lesions of sarcoid, located usually in the small bones of the hands, have no similarity to the bone lesions shown in this case or to the others he discussed.

Dr. Eckhardt: What primarily caused the diarrhea and pot belly?

Dr. Stamler: The lymphoid tissue of the gastrointestinal tract is involved in the lipogranulomatous process, and that may be a factor in the intestinal dysfunction that results. The sections in this case do not show much indication of this, so I cannot explain the diarrhea. Certainly there was no evidence of pancreatic disease.

I would like to make one or two comments, particularly about points that Dr. Tidrick raised. First, in regard to the more malignant variants of this type of disorder, Letterer-Siwe's disease, I certainly agree that it is extremely difficult to distinguish such a disease from a neoplastic disease of the reticulo-endothelial system and, in many cases I really see no reason for not considering them to be of that nature. Although what is described as Letterer-Siwe's disease is said to occur only in the very young age group, a similar pathological entity may occur at any age. The differentiation between neoplastic and reactive conditions

of the reticuloendothelial system in any age group is often difficult and in some cases impossible.

The other point I would like to raise is with regard to the benign extreme of the lesion. Dr. Tidrick showed a beautiful photomicrograph of a lesion with the gaudy eosinophils and large phagocytic reticuloendothelial cells which are characteristic of this type of lesion. There is not anything very specific about these cell types. They occur in many lesions. The reticuloendothelial system is involved in any inflammatory reaction. Eosinophils are found in a great variety of lesions. For these reasons, I wonder if at the benign extreme we are not perhaps including a miscellaneous group of lesions which have a histologic similarity.

Dr. Sheets: What kind of structural change causes these lesions in the lungs?

Dr. Stamler: There is extreme fibroblastic proliferation associated with a chronic inflammatory reaction with an accumulation of considerable amounts of lipid material in large phagocytes. Lipid pneumonias frequently have extensive fibrosis as well as the reticuloendothelial response so that there is not anything very specific about that type of response in the lungs.

Dr. Eckhardt: Does anyone want to comment upon therapy of X-ray and nitrogen mustard and why?

Dr. Gillies: It has been shown that the X-ray does have a direct effect on the reticuloendothelial cells. This was shown by Sossman who covered half of a lesion in the skull. The treated portion showed improvement following X-ray and the untreated portion did not. In younger children where this disease runs a fatal course, it has been shown that they are improved by treatment for a while. In older people and in young adults, the improvement may be permanent. The first case reported by Christian, a girl in her early teens, is still alive to my knowledge. She received X-ray therapy by Sossmann who was the first to employ it in the treatment of this condition.

Dr. Robert L. Jackson, Pediatrics: With regard to nitrogen mustard, it has been shown that it has an effect upon the reticuloendothelial system. Inasmuch as she did not show favorable response to X-ray therapy, we thought in desperation it might be worth while to give her a trial on nitrogen mustard.

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IS TIME RUNNING OUT FOR THE BUREAUCRATS?

To those who have deplored the increasing paternalism of Washington bureaus, if we may label them so, the action of Indiana in throwing open to public inspection its relief rolls may well seem the beginning of the end for a philosophy of life quite different from that upon which our government was founded. It may mark the beginning of a return of local problems to local control, the assumption of responsibility for its own needs by the community itself.

Briefly, the last Indiana legislature passed a law opening the relief rolls to public inspection in the hope that undeserving persons might thereby be erased from them. The Federal Security Administration refused further federal funds to Indiana on the grounds that the federal law make mandatory the privacy of the rolls. The Indiana legislature was called into special session when funds were withdrawn, and appropriated state funds to carry on, seeking a change in the federal law meanwhile. Much sentiment has been expressed over the country in favor of changing the federal law and it is entirely probable that the Congress of the United States will amend the present law so that the rolls may be opened to public inspection.

It has become increasingly evident that there is widespread abuse of the welfare program. Many persons receiving old age assistance funds winter in Florida and live expensively the rest of the year, a New York investigation proved. The program for aid to dependent children has become a racket in some states. Welfare workers

have seemed unable to weed out undeserving persons, and with privacy cloaking the names of those receiving aid, it has been impossible to bring public opinion to bear in correcting abuses.

Experience through the years has shown that relief programs are most efficiently administered the closer they are to the problem. County control is better than state, and state far better than federal. Indiana may well find that the whole program will cost her little more than the former program of federal-state contributions. It can be a more effective program, and yet prove not too costly for the state.

If other states would follow Indiana's example, it is our feeling that a great saving could result. This would be accomplished in two ways: first, in weeding out ineligible persons; second, in eliminating the "overhead" involved in transmitting taxes to Washington, having them processed through the various bureaus, and then returned to the state. For each dollar of tax money sent to Washington for the welfare program, it is doubtful if more than 60 or 70 cents is returned, the rest being absorbed by administrative costs.

Another way in which a saving in these programs could be effected is by changing the Iowa law so that the medical grant might be paid directly to the physician. The federal law now makes this possible but the Iowa law has not been changed to conform. As it now stands, the medical grant is added to the check going to the old age recipient, and is usually considered as an addition to the grant. Doctors receive only a small proportion of the money allotted for medical needs. It is true that the old assistance grants are low, too low to provide an adequate standard of living, but it is dishonest to pad the grant by adding a medical allowance which is not used for that purpose but merely as a supplement to the prevailing grant. It is unfair to the persons not receiving a medical grant, and it is unfair in many ways to those who do, since they really need medical care and many do not get it because they use their funds for living expenses. More and more, persons who deal with the assistance program are coming to feel that there would be a distinct saving in funds if the medical grants were paid as incurred, and that the recipients would also receive better medical care under such a method.

No one begrudges relief to those in need, but there is an increasing resistance to the philosophy which has prevailed in Washington for some 15 years that the federal government should provide security to all of its citizens. Labor long ago overthrew the paternalistic system in industry, and there seems to be a growing tendency for the public, as a whole, to throw off paternalism from Washington and to stand, instead, on its own rights and responsibilities as a citizen. We hope the trend continues.

ABOLITION OF FIREWORKS

The American Medical Association has recommended to the Eighty-second Congress that a bill be passed which would prohibit the transportation of fireworks into any state or political subdivision thereof in which the sale of such fireworks is prohibited, unless they are to be used for public displays or other purposes specifically authorized by the laws of such state or political subdivision.

Neither the House of Delegates nor the Board of Trustees of the American Medical Association has considered specific legislation of this type. However, inasmuch as the medical profession has for many years been concerned with the serious menace to life and health resulting from the use of fireworks, the Association is in favor of proposals such as the bills under consideration which are designed to alleviate health hazards of this nature.

It is surprising to review old records formerly prepared by the AMA analyzing the deaths and injuries resulting from the celebration of the Fourth of July. The peak of these injured was reached in 1938 when 7,951 people were killed or injured as direct results of the use of fireworks. The last survey was compiled in 1946 which indicated a reduction in the number of fatalities, injuries and complications by tetanus. Because of this marked decline in incidence the survey was discontinued.

Iowa is indeed fortunate in having a State law controlling the use of fireworks. There have been no fire losses from the Fourth of July celebrations for several years. Should this legislation be approved, the American Medical Association will have made a valuable contribution in the field of preventive medicine.

LABORATORY DIAGNOSIS OF TUBERCULOSIS

A recent published report* of a Symposium on Laboratory Diagnostic Methods in Tuberculosis should be of interest to all physicians. This symposium was sponsored jointly by the College of American Pathologists and the American Society of Clinical Pathology at the annual meeting of the latter group in Chicago, October 17, 1950. The discussion was divided into three parts: microscopic examination of stained material, demonstration of *M. tuberculosis* by culture and animal inoculation. Questions were answered by the participants at the close of each of the three parts.

In addition to a critical evaluation of currently used methods for staining, culture and animal inoculation, the technics and limitations of each procedure together with numerous references to source material are given.

Comparative results, obtained by applying each

procedure to the same specimen, demonstrate that the chances of finding the organisms are much greater by culture or animal inoculation than by any of the staining methods or their refinements alone. It may be necessary to apply all three methods in repeated tests to establish that a given disease is or is not tuberculosis.

False positives as well as false negatives are serious matters in dealing with the tuberculosis problem and each of the three methods of diagnosis are open to error. Other acid fast bacilli or avirulent forms of tubercle bacilli cannot be distinguished from virulent *M. tuberculosis* by stains of smears or tissue sections. Organisms other than *M. tuberculosis* may produce lesions indistinguishable from tuberculosis. The organisms in a certain specimen may be too low in number or virulence to produce an infection in the laboratory animal. There are definite indications for the use of each of the three technics available.

Accuracy of diagnosis as well as speed in arriving at the diagnosis is of greater importance in tuberculosis than in most infectious diseases. The consequences of social and economic adjustments to be made when the disease is diagnosed are great. A patient with an undiagnosed open lesion must be considered to be dangerous to his intimate contacts as well as to the public at large.

Even the best diagnostic technics are not absolutely reliable. Certainly the patient as well as the physician are best served by repeated examinations in competent hands. A diagnosis with such serious implications should not be established or excluded on the basis of a single examination.

The American Trudeau Society has set up the following criteria: "If sputa and gastric washings are carefully and repeatedly examined . . . negative results are of distinct diagnostic value. However, it should be emphasized that a given specimen can never be called "negative for tubercle bacilli" until it has been examined by adequate cultural methods and animal inoculation as well as by examination of the direct and concentrated smears. In a patient with a demonstrable parenchymal infiltration, in whom tubercle bacilli cannot be demonstrated, causes for the lesion other than active pulmonary tuberculosis should be sought.

"In a tuberculous patient no specified number of negative sputum examinations gives absolute assurance that another specimen may not show tubercle bacilli. Nevertheless, it is convenient to designate an arbitrary number of negative examinations which may be taken as presumptive evidence of bacteriological remission. To designate sputum as negative in this limited sense, it is recommended that three adequate specimens of sputum or of gastric contents, taken at least a week apart, be found negative by culture or by animal inoculation."

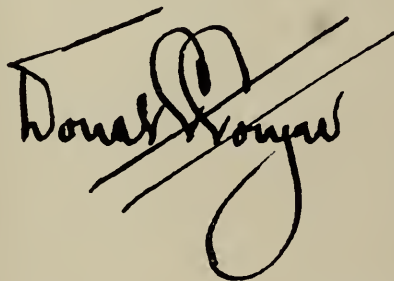
(Continued on page 471)

* Am. J. Clin. Path. 21:675-700, July, 1951.

President's Page

In attempting to familiarize the members with the inner workings of the State Society Office, I would like to emphasize the part played by the Medical Service Committee. This Committee came into existence following the World War II at which time Dr. Fred Sternagel became its chairman. Originally listed as the Committee on Medical Service and Public Relations, its name has now been changed, conforming to the plan of the AMA, to the shorter name of Medical Service. Public Relations is now handled by a Committee comprised of the President, President-elect, Chairman of the Board of Trustees, Chairman of the Council, and Chairman of the Medical Service Committee. The present Medical Service Committee, still chairmanned by Dr. Sternagel, has been broken down into seven or eight sub-committees, each of which have been active during the current year.

Dr. Martin I. Olsen, the virtual father of the Blue Shield Plan, has devoted countless hours to the Sub-Committee on Insurance. The Veterans' Program now functioning rather smoothly had its turbulent course charted and guided by Dr. Roy C. Gutch of Chariton. The fee schedule and the home town treatment program were largely activated through his work. Dr. Otto N. Glesne of Ft. Dodge is the Chairman of the Sub-Committee on Public Information. This Committee is relatively new but is exploring new fields that the public may be better informed in all legitimate medical news. Dr. James E. Reeder of Sioux City, a past President of the Society, is Chairman of the Committee on Allied Professions. Under his leadership we are accomplishing further cooperation with the dentists, pharmacists, veterinarians and nurses. It has been intimated that the legal profession is somewhat interested in aligning themselves with us in the fight against socialism. A new and highly important Sub-Committee called Hospital and Professional Relations Committee has as its Chairman, Dr. Callistus H. Stark of Cedar Rapids. This star studded Sub-Committee is presently engaged in studying the controversial issues that are involved between the hospitals and the profession, especially as it concerns the pathologists and roentgenologists. Dr. Frank D. McCarthy of Sioux City is Chairman of the Sub-Committee on Relief and Health Agencies. It is their duty to advise the various State Agencies and they are carefully reviewing these problems. An item heretofore neglected by our State Society is Health Education. Up to the present this has been allowed to fall into the hands of non-professional personnel. Dr. Joseph G. Fellows of Ames is the Chairman of this Sub-Committee, one which requires tact and understanding. The last Sub-Committee headed by Dr. Tom D. Throckmorton of Des Moines is labeled Labor and Management. The functioning of this Committee is to develop and foster an understanding with the various unions as well as management in solving their medical problems. As you can see this all inclusive group must be headed by a true executive. We are indeed fortunate in having such in the person of Dr. Fred Sternagel of West Des Moines who has spent many days away from his private practice directing the efforts of the Medical Service Committee. I consider him the hardest working member of our State Society.

A handwritten signature in dark ink, appearing to read "Donald Royce". The signature is stylized with a large, looping initial "D" and a long, sweeping underline that extends to the right.

President

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. HOWARD W. SMITH, Woodward

President-Elect—MRS. J. DONALD HENNESSY, 205 Frank St., Council Bluffs

Secretary—MRS. CHARLES F. LOWRY, 246 Lincoln, Council Bluffs

Treasurer—MRS. DWIGHT C. WIRTZ, 449-56th St., Des Moines

FALL BOARD MEETING OF WOMAN'S AUXILIARY TO IOWA STATE MEDICAL SOCIETY

There were 30 in attendance at the regular fall board meeting and luncheon of the Woman's Auxiliary to the Iowa State Medical Society which was held at the Kirkwood Hotel, September 26 in Des Moines. Mrs. Howard W. Smith, president, presided. The treasurer, Mrs. Dwight C. Wirtz, reported a balance on hand to date of \$1,562.89. The Woman's Auxiliary is in the process of loaning \$1,000 from its Nurses' Loan Fund. One student has already completely repaid her loan. All county auxiliaries are urged to contribute annually to this worthy fund.

The highlight of the meeting was the distribution of the new yearbooks by the chairman of that committee, Mrs. Claire H. Mitchell. This is the first time in the history of the Iowa Auxiliary that yearbooks have been available, so this new venture may be considered a milestone in our progress. Names of the National, State and County officers may be found in the yearbook along with pertinent information in regard to duties of officers, committee chairmen and suggested activities for the entire year. Yearbooks will be available to all Auxiliary members in the state.

Mrs. Lloyd K. Shepherd's program suggestions to county presidents will be found elsewhere in this issue of Auxiliary news. She stressed verbally, however, that the Advisory Council recommends that more be done for doctors in a social way. The county auxiliaries can make a real contribution by having more parties and social gatherings.

Mrs. George B. Crow, first vice president, reported for the Organization Committee. Mrs. Elias B. Howell, chairman of the Legislation Committee, stressed the value of "Capitol Clinic" in which up-to-date material regarding medical legislation is briefed. This letter may be secured free by requesting that one's name be placed on the mailing list of:

"Capitol Clinic"

Washington Office of the American Medical Association
1523 L Street, N. W.
Washington 5, D. C.

Mrs. Dean H. King, reporting for the Public Relations Committee, emphasized a re-evaluation of inter-professional relationships in regard to creating better understanding between doctors, nurses and patients. This Committee recommends active membership in professional organizations, inter-club cooperation and the stimulation of broad interest in Blue Cross and Blue Shield Health Insurance.

Mrs. Fred Moore, chairman of the Archives Committee, requested discussion as to the usefulness of permanent notebooks for each of the Councilors. The consensus of opinion was that such notebooks would prove valuable to Councilors as they have to state officers and committee chairmen. Mrs. Moore was appointed to secure them.

Mrs. William B. Chase, Jr., chairman of the Finance Committee, requested that vouchers and bills be presented to the Treasurer as soon as possible. Dues should be sent to the Treasurer on time to facilitate her work. For the first time in the history of the Auxiliary in Iowa, board members will be allowed 6c per mile for attendance at board meetings.

Mrs. James P. Clark, chairman for the national *Bulletin* stated that there are 884 Auxiliary members in the state, only 32 of whom subscribe to our national magazine. This is a rather humiliating situation and it can be remedied by sending one dollar to Mrs. James P. Clark, Estherville, Iowa.

An entirely new Committee on Defense has been appointed with Mrs. Melvin B. Cunningham of Norwalk as chairman. Duties have not yet been clearly defined so activities of this committee will be reported later.

Outlet sales of articles made by the handicapped have proved excellent projects not only in financial gain for the handicapped but as a cooperative experience for doctors' wives. Approximate receipts this last year in the following counties were: Black Hawk, \$400; Polk, \$800; Webster, \$500. Outlet sales are annual affairs in the above counties. A discussion was held as to types of articles which sold best and those which did not sell. A proper spacing of sales was recommended so that a better assortment of articles might be available for each sale. The use of up-to-date patterns by

those who make the articles would increase sales value.

Mrs. Keith M. Chapler
Publications Chairman

PROGRAM COMMITTEE

With summer behind us, we are all busy starting our fall meetings and thinking of programs and activities for the year ahead. Your Program Committee has been working since late July. We have our Doctors' Advisory Board suggestions and our national program helps so now we are ready to go.

You will find the outline of our year's work—Iowa's 6-point program—enclosed along with the material from the national program chairman. From these four pages you should be able to choose the things which you feel your group is ready to do this year. We will be sending material as it is available. All committees are working together in order to give you the material you need to carry on in your county.

We are planning our year's work so that certain projects can be completed during certain months. During October, November and December, we are advised to stress nurse recruitment, sale of *Today's Health* and the sale of goods made by the crippled and disabled of Iowa.

Several of our counties have accomplished a great deal with their "Future Nurse Clubs." What can your auxiliary do in your community to encourage girls of high school age to study nursing? You will receive material, probably within the next ten days, from Mrs. Carl A. Hensen of Waterloo, who is chairman of that committee. There is a film available—"Women in White." It can be obtained by writing the Iowa State Nurses Association, 503 Shops Building, Des Moines. The article on Future Nurses Clubs in the September issue of the Auxiliary News gives you a good picture of the organization. The work that has been done in Waterloo is a real inspiration and should serve as a guide to many county auxiliaries over the state. When can you organize such a group?

The sale of *Today's Health* is extremely important. You should not be satisfied until you have placed copies in all libraries, doctors' offices and schools. You should have received a letter from Mrs. Richardson E. Clark, Manchester, chairman of that committee, with suggestions for your annual drive. Be a super salesman this year and sell your friends on our *health* magazine. We need this good publicity.

Through craft and hobby exhibits in Sioux City, Waterloo, Fort Dodge, Des Moines and Dubuque, a total sales well in excess of \$3,000 was turned over to the Iowa Society for Crippled Children and Adults last year. This is one of the most satisfying projects our Auxiliary has ever sponsored. We are not only helping them sell their products but we are also helping them produce articles

which are more useful and salable. Write Mr. Stephen B. Jones, Consultant, Easter Seal Services, Iowa Society for Crippled Children and Adults, Inc., 2917 Grand Avenue, Des Moines 12, Iowa. Mr. Jones will advise you concerning dates, place of sale and availability of material.

The point we are to emphasize this year is health education. We advise programming it for January and February, after much careful preparation. It is the hope of the State Medical Society that Auxiliary members will take an active part in all health organizations in their community. This is vitally important. We hope to cooperate with the Farm Bureau and 4-H Clubs in working on rural health problems. Mr. M. I. Whorlow of the Ames Extension Service will be happy to help you.

Pamphlets on health education are available so that you can send for the materials you will be needing. Send those orders to the A.M.A. office, attention of Miss Margaret Wolfe, 535 North Dearborn, Chicago, Illinois.

We still have an important job to do through public relations. Mrs. Thomas Kane, Boone, will be sending you her committee's suggestions.

We are all in search of new material and a better picture of this expanding Auxiliary program. It can all be found in the National Auxiliary Bulletin which should be a must for every county officer.

Another reminder—use your year book calendar. It will be a great help to you.

Program Committee

Mrs. Lloyd K. Shepherd, Des Moines
Chairman
Mrs. Wallace H. Longworth, Boone
Mrs. Robert P. Mason, Des Moines
Mrs. Harold J. Roddy, Mason City

PROGRAM COMMITTEE GOALS

The program committee hopes to build the program for 1950-51 around the following projects, with special emphasis on health education:

1. Nurse Recruitment and Student Nurse Loan Fund.
2. Increase sales of *Today's Health*.
3. Sales of goods of Handicapped and Crippled.
4. Health Education Program
 - A. School Health Programs—work with County Health Programs
 - B. Rural Health—cooperation with Ames Extension Service, Farm Bureau and 4-H clubs
 - C. Cooperation with lay groups and organizations
 1. County Cancer Society
 2. County Tuberculosis and Health Association
 3. P.T.A. Health Committee
 4. Legion Auxiliary Committees
 5. Business and Professional Women's Clubs

6. League of Women Voters

7. P.E.O.

8. A.A.U.W.

9. Women's Clubs

10. Y.M.C.A. — Y.W.C.A.

11. Eastern Star

12. Service Clubs

13. Church groups and others

D. State Board of Health

E. State and Local Health Projects

F. Community Health Councils

G. Mental Health

5. Constant education and activity concerning legislative matters.

6. Social Functions.

PRESIDENT'S MESSAGE

Iowa's gorgeous autumn colors are decorating trees, fields and meadows. It is good to be alive and to enjoy this beauty.

I was pleased with the fine attendance at the Board meeting in Des Moines on September 26. I feel that it is evidence of a growing active Auxiliary. The women who attended showed interest and gave to each other stimulation and enthusiasm to continue and expand the work of our Auxiliary. I am justly proud of every one of you. The excellent reports from the committee chairmen showed that our committees are hard at work. I call your attention to the message from Dr. Ben T. Whitaker, Chairman of our Advisory Committee, on page five.

The Year Books are ready. The Year Book Committee has worked diligently and well to prepare this useful manual or handbook. It will serve many useful purposes. I am sure county officers will find it a very useful book. It is intended to help them in their Auxiliary work. Every Auxiliary member can find interesting information in it. I recommend that you read it frequently.

I plan to attend the National Conference of National Officers, State Presidents and Presidents-Elect in Chicago on November 14 to 15. The conference plans this year will include panels which will be based on topics, instead of Auxiliary departments. They want to get down to the "grass roots" and have the state presidents bring to you *how* they do projects. The panels will include Organization, Finance, Nurse Recruitment, *Today's Health* and Community Service. Iowa is to participate on the Nurse Recruitment panel. You can get full reports of the conference in the National Bulletin.

I am pleased to announce that our past president, Mrs. Claire H. Mitchell, is a member of the National Public Relations Committee.

To County Presidents: I ask that you send reports of your meetings and your activities or projects that you sponsor in your local community to Mrs. Keith M. Chapler, Dexter, Iowa.

We can all learn from each other by reading of your work. Some of you may think that your meetings are not important, but they are. In speaking to individual Auxiliary members, I learn that doctors' wives are working in many activities. Let us all know about them.

Mrs. Howard W. Smith,
President

NEW COMMITTEE MEMBERS

The following Auxiliary members were elected to the Nominating Committee at the recent Board meeting: Mrs. Claire H. Mitchell, Indianola, Chairman; Mrs. Roger M. Minkel, Fort Dodge; and Mrs. Fred Moore, Des Moines; appointed by the President: Mrs. Lonnie A. Coffin, Farmington and Mrs. Elbert T. Warren, Stuart.

The President has appointed the following to serve as the Program Committee for the Annual Meeting: Mrs. Lester R. Hegg, Rock Valley; Mrs. Loyd K. Shepherd, Des Moines; Mrs. Martin A. Blackstone, Sioux City; Mrs. Edward B. Hoeven, Ottumwa and Mrs. Claire H. Mitchell, Indianola.

EDITORIALS

(Continued from page 467)

DIABETES WEEK

The American Diabetes Association began its third year activities with a nationally proclaimed "Diabetes Week" in November, 1950. The current Diabetes Detection Drive is scheduled for November 11 to 17.

In 1950 it was discovered that the proportion of newly discovered cases to the total number of people tested approached one per cent, although in Connecticut an incidence of two and one-half per cent of glycosuria was found. These figures would indicate a definite desirability of annual urinalysis of all adults. The American Medical Association has approved of self testing which is easily accomplished by means of a home testing unit. All physicians may assist by promoting a detection program among his own family and every patient that he routinely sees. It is preferable for a urinalysis to be made within one to three hours after meals. Every positive urine test should be followed with a blood sugar determination.

Each county medical society should have a Committee on Diabetes to emphasize the importance of finding the unknown diabetic patient.

Diabetes has no exclusive regard for race, age, sex, weight or previous state of health. Hidden diabetes is most likely to appear among relatives of diabetic patients, obese individuals, persons over 40, individuals who feel "below par" and patients recovering from acute illnesses.

The American Diabetes Association should be commended for its efforts to find the unknown diabetic. We can assist by carefully checking our own patients.

STATE DEPARTMENT OF HEALTH

Walter Diering

DIABETES MELLITUS MORTALITY

Iowa, 1950

Diabetes mellitus was mentioned on 969 of the death certificates filed in Iowa during 1950. This represents 37.0 deaths per 100,000 population. To put it otherwise, 3.6 per cent of the death certificates filed for the year had a mention of diabetes mellitus. However, diabetes mellitus was coded as to the underlying cause of less than half of these 969 deaths. On the basis of diabetes mellitus as the underlying cause, 471 deaths were so coded. This represents 18.0 deaths per 100,000 population and 1.7 per cent of the total deaths. On the remaining 498 death certificates, diabetes mellitus was reported as a significant condition present at the time of death but not the underlying cause of the death. In most cases this means that the mention of diabetes mellitus was entered in part II of the medical certification portion of the death certificates.

A breakdown of these data by sex and median age is as follows:

	Diabetes Mellitus Underlying Cause	Mention of Diabetes Mellitus But Not Underlying Cause	Total Mention of Diabetes Mellitus
Total	471	498	969
Male	183	201	384
Female	288	297	585
Median age both sexes	70.6	69.7	70.1

The median age of all persons who died in Iowa during 1950 was 71.5 years. It will be observed that the median ages indicated above are somewhat lower than this 71.5 figure. In addition, it is of interest to note that females constitute about 60 per cent of the deaths involving diabetes mellitus.

The following table gives the underlying cause of death in the 498 cases where diabetes mellitus was mentioned on the death certificate, but was not indicated to be the underlying cause of the death. It is worthy of note that 361 or about three-fourths of these deaths were due to one of the major cardiovascular-renal diseases (code numbers 330-334, 400-450, 590-594).

Underlying Cause of Death Where the Death Certificate Contained a Mention of Diabetes Mellitus, but Diabetes Mellitus not Coded as the Underlying Cause of Death.

International List of Causes of Death	Underlying Cause	Number of Deaths
002	Pulmonary tuberculosis	4
025	General paralysis of insane	1
057.0	Meningococcal meningitis	1
096.9	Other diseases attributable to viruses	2
140-205	Malignant neoplasms	47
210-239	Benign and unspecified neoplasms	3
241	Asthma	1
290.0	Pernicious anemia	1
304	Senile psychosis	1
330-334	Vascular lesions affecting central nervous system	87
345	Multiple sclerosis	1
355	Other diseases of brain	1
400	Active rheumatic fever	1
410-443	Heart diseases	235
444-450	Hypertension (without mention of heart) and general arteriosclerosis	26
462.1	Varicose veins of esophagus	1
464	Phlebitis and thrombophlebitis	1
465	Pulmonary embolism and infarction	1
480-493	Pneumonia and influenza	19
500-502	Bronchitis	2
518	Empyema	1
527.0	Pulmonary collapse	1
541.0	Ulcer of duodenum	1
550.0	Acute appendicitis	1
561, 570	Hernia and intestinal obstruction	4
571	Gastro-enteritis and colitis	1
578	Other diseases of intestines and peritoneum	1
581.0	Cirrhosis of liver	4
584	Cholelithiasis	3
587.0	Acute pancreatitis	1
592, 593	Nephritis (chronic and unspecified)	12
600.0	Pyelitis, pyelocystitis, and pyelonephritis	2
610	Hyperplasia of prostate	4
631	Uterovaginal prolapse	1
642.3	Eclampsia of pregnancy	1
692.4	Cellulitis and abscess of leg	1
725	Arthritis, unspecified	1
730.2	Unspecified osteomyelitis	1
800-962	Accidents	21
	TOTAL	498

DIRECTIONS FOR A "CARRIER" OF TYPHOID ORGANISMS, TO FOLLOW

The precautions which a carrier is to observe are simple. Any conscientious, intelligent person, may, without difficulty, so conduct himself that there will be no danger of infection from him to others.

The need of personal cleanliness is self-evident. The source of infection in typhoid fever is in the bowel and bladder discharges of infected individuals.

Always wash hands thoroughly with hot running water and soap after going to the toilet and before handling food or dishes. If soap and hot water

are not available some disinfectant should be used. Soiled bed and body linen should be boiled or a disinfectant used. The importance of cleanliness on the part of other members of the family is obvious. Other members of the family and close contacts should be immunized by use of

cases have been reported as compared with nine for the entire year of 1950. The following is the summary of the 26 1951 cases:

These are the cases reported to the State Department of Health and as such may represent only a partial listing of the cases. While two

Case Number	County of Residence	Date of Onset	Sex	Age of Case	Probable Source
1	Dallas	January	F	7 years	Carrier source found
2	Dallas	January	F	2½ years	Carrier source found
3	Polk	February	F	21 years	No definite—probably well water in Missouri
4	Fayette	March	M	9 years	Carrier source
5	Dubuque	June	M	28 years	Resident of flooded area
6	Iowa	July	M	21 years	Under investigation
7	Warren	July	F	38 years	Under investigation
8	Warren	August	M	28 years	Works near Des Moines. Possible carrier source in home neighborhood. Investigation incomplete. No established relation to case No. 7.
9	Pottawattamie	July	M	27 years	Lived in flooded area
10	Pottawattamie	July	F	29 years	Carrier source found in family
11	Pottawattamie	August	M	38 years	Same family and same source
12	Pottawattamie	August	F	9 years	Cases 12 and 13 are twins
13	Pottawattamie	August	M	9 years	Visited in North Iowa in home with typhoid history about 10 years ago. Investigation under way.
14	Marshall	July	F	11 years	In previously flooded area and also visited out of state in home with previous typhoid fever. Probable carrier source in one of these homes. Being investigated in Kansas.
15	Polk	August	M	3½ years	Still under investigation
16	Polk	August	F	38 years	Cases 16 through 19 are family members of case 15 and are quite possibly secondary
17	Polk	August	F	7 years	to that case. These cases are being investigated by the city of Des Moines.
18	Polk	September	M	5 years	3 cases of typhoid in family members in 1937, one of whom has been found to be a carrier.
19	Polk	September	F	6 years	Vacationed in Wisconsin prior to onset of illness.
20	Chickasaw	August	M	10 years	Under investigation.
21	Linn	September	F	29 years	No contact with case No. 20. No contacts outside of county.
22	Linn	September	M	24 years	Travelled constantly with husband through Iowa, Minnesota, Illinois and Wisconsin. No clues as to source obtainable.
24	Clinton	August	M	28 years	Under investigation
25	Appanoose	August	M	33 years	Railroad worker who, between runs spends time in Des Moines and Ottumwa. No clues as to source in home community.
26	Fayette	July	F	29 years	Before onset of illness gave nursing care to a woman thought to be a typhoid carrier.

three doses of typhoid vaccine followed by annual booster doses. The State Health Laws and Regulations forbid a typhoid carrier to engage in the handling of milk, butter, food or food products liable to be eaten without being cooked, if such food or food products are offered for sale.

The bowel and bladder discharges of a carrier should be deposited either in a sewer, cesspool or privy of approved sanitary construction. The privy should be screened during the months when flies are prevalent. The interior should be scrubbed at intervals. Special cleaning should be given to the parts which might be contaminated with discharges from the carrier. Privy vaults should be disinfected from time to time. Freshly prepared milk of lime is the cheapest effective disinfectant. In case of change of residence; death or termination of the carrier state by surgery of the carrier the State Department of Health, Des Moines, Iowa, should be notified.

TYPHOID FEVER

The first nine months of 1951 have seen an increase in the number of cases of typhoid fever reported in Iowa. To date, October 10, 1951, 26

cases are listed as being in flooded areas we have no definite proof that flood conditions were responsible for the cases. However, it does happen that in these two cases no leads as to carrier sources have been obtained. Previously known carriers have not been responsible for any of our cases this year.

MORBIDITY REPORT

Disease	Sept. 1951	Aug. 1951	Sept. 1950	Most Cases Reported From These Counties:
Diphtheria	3	1	4	Dubuque, Linn
Scarlet Fever	15	12	11	Cerro Gordo, Clayton, Des Moines
Typhoid Fever	15	2	1	Linn (2), Polk (5), Pottawattamie (4), Chickasaw, Clinton, Hardin, Warren 1 each
Smallpox	0	0	0	
Measles	13	31	5	Des Moines, Linn, Mills, Story
Whooping Cough	40	52	140	Clinton, Des Moines, Linn
Brucellosis	55	57	18	Black Hawk, Cherokee, Hamilton, Story
Chicken Pox	28	10	10	Black Hawk, Des Moines, Scott
Meningitis men.	1	5	2	Allamakee
Mumps	59	60	22	Black Hawk, Des Moines, Linn
Pneumonia	11	2	4	Scattered
Poliomyelitis	159	140	473	Johnson, Polk, Woodbury
Rabies in Animals	12	20	54	2 Hancock, others 1 to a county (scattered)
Tuberculosis	78	73	104	For the State
Gonorrhea	68	36	76	For the State
Syphilis	144	142	221	For the State

Iowa Academy of General Practice

President—Cecil V. Hamilton, M.D., 145 E. 4th St., Garner

President-Elect—Joseph G. Fellows, M.D., 405½ Douglas Ave., Ames

Vice President—Ivan T. Schultz, M.D., 106 N. Taft St., Humbolt

Secretary-Treasurer—William M. Sproul, M.D., 912 Equitable Bldg., Des Moines

WHY BELONG TO THE ACADEMY?

When you are asked to join the Academy of General Practice, instead of using your most effective "sales resistance" by saying that you just cannot see your way clear at this time, or that you are busy, thus making it impractical to belong to organizations in which you can take no part, think on these facts a few moments. Every general practitioner **SHOULD** be interested in:

1. Elevating the standards of general practitioners as a group as well as individuals.

2. Seeing that provisions are made for increasing his "Capital Stock," i.e., his knowledge, by having more post-graduate facilities where they are readily available to him.

3. Safeguarding and furthering the interests, rights and privileges of his group if such should be necessary. Do not misconstrue this to mean that the organization of general practitioners is to be vindictive or vengeful in anyway. Fortunately, here in Iowa our organization works in harmony with the Iowa State Medical Society, but that is not so in some localities in other states.

4. Helping to provide better medical care for the people of our state and nation. This gives a real challenge to every general practitioner to keep abreast with the rapid advancements in medical science.

5. Encouraging and helping young men and women in preparing, qualifying and establishing themselves in general practice. Even in Iowa we can use more general practitioners, and somehow we must secure them.

Every general practitioner is **NOT** scattering his ideas, his energies or his memberships too widely by belonging to three basic organizations of his profession. These three are:

1. The A.M.A. for the maintenance of his public relations, national representation and organized effort in general.

2. The *State and county medical societies* for the scientific benefits and for social activities which afford a better opportunity to know more about your colleagues.

3. The A.A.G.P. for the chance to talk shop with your fellow practitioners, for the oppor-

tunity to follow a line of thought which is your own field of endeavor and for the chance to make your walk of life one in which you can take unbounded pride.

Do not wait for a personal invitation. This is truly your own organization and all you have to do is to fill in the application blank which was mailed to you earlier this year. If you have mislaid it, drop a card or letter to the Secretary of your State Academy of General Practice and ask for one. This is "right up your own alley."

IT IS BEING DONE

A new clinic, emphasizing the "family doctor" type of medical practice, will be established in the Out-Patient Department of John Gaston Hospital, Memphis, Tenn., by the University of Tennessee College of Medicine and the Hospital Board of Trustees. The clinic will be known as the Family General Practice Clinic.

The clinic opened September 27, the beginning of the Fall quarter at the medical units, as an experiment. It may have far-reaching effects upon both medical education and medical service to patients.

Dr. Hyman said the clinic will stress, for twelfth-quarter (graduating) medical students, the idea of "family practice," which has been eclipsed in recent years by the trend to specialization.

In the clinic, it will be pointed out to advanced medical students what a capable general physician is able to do effectively, and when his limitations are reached. In this way, the student will learn when to refer a patient to a specialist.

General practitioners from Memphis and neighboring small towns will serve as visiting physicians at the clinic to give students the benefit of actual experience in general practice.

The various specialty clinics will continue to operate as in the past, but as most of them have a heavy patient load, they will welcome a diversion of some of their patients to the new clinic. This will enable the clinics to give more thorough service to those who have been first screened by the family clinic.

—Reprinted from *GP*, August, 1951.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

PEPTIC ULCER, Clinical Aspects, Diagnosis and Management, edited by *David J. Sandweiss, M.D., F.A.C.P.*, Associate Attending Physician, Division of Internal Medicine, Harper Hospital, Detroit, Mich. W. B. Saunders Co., Philadelphia, 1951. Price \$15.00.

STATISTICS FOR MEDICAL STUDENTS and Investigators in the Clinical and Biological Sciences, by *Frederick J. Moore, M.D.*, Associate Professor of Experimental Medicine; *Frank B. Cramer, B.A.*, Research Fellow and *Robert G. Knowles, M.S.*, Research Associate, Department of Experimental Medicine, University of Southern California School of Medicine. The Blakiston Co., Philadelphia, 1951. Price \$3.25.

A TEXTBOOK OF CLINICAL NEUROLOGY, by *J. M. Nielsen, B.S., M.D., F.A.C.P.*, Clinical Professor of Neurology and Psychiatry, University of Southern California; Senior Attending Physician (Neurology), Los Angeles General Hospital; Attending Neurologist, Hospital of the Good Samaritan and Methodist Hospital, Los Angeles, Calif. Third Edition. Paul B. Hoeber, Inc., New York, 1951. Price \$10.00.

THE 1951 YEAR BOOK OF MEDICINE (May, 1950-May, 1951), edited by *Paul B. Beeson, M.D.*; *J. Burns Amberson, M.D.*; *William B. Castle, M.D.*; *Tinsley R. Harrison, M.D.* and *George B. Eusterman, M.D.* The Year Book Publishers, Inc., Chicago, 1951. Price \$5.00.

THE 1951 YEAR BOOK OF PEDIATRICS (July, 1950-June, 1951), edited by *Henry G. Poncher, M.D.*, Professor and Head, Department of Pediatrics, College of Medicine, University of Illinois; with the collaboration of *Julius B. Richmond, M.D.*, Professor, Department of Pediatrics, College of Medicine, University of Illinois and *Isaac A. Abt, M.D.*, Editor Emeritus. The Year Book Publishers, Inc., Chicago, 1951. Price \$5.00.

BOOK REVIEWS

PROCEEDINGS OF THE SECOND CLINICAL ACTH CONFERENCE, Two volumes: I, Research; II, Therapeutics, edited by *John R. Mote, M.D.* (The Blakiston Co., Philadelphia, \$8.50 each).

The first volume of this pair is comprised of a collection of preliminary reports by several experimental teams, all experts. Studies under way at widely scattered centers are brought together in these pages in an effort to consolidate knowledge regarding the metabolic effects of ACTH and cortisone. Although still theoretical, these effects are under such careful scrutiny that pursuing this book gives the reader some advance information of what is still to come in the hormone field.

Volume II can be valuable to the practitioner as a reference book of diseases that might respond to ACTH therapy. Reports are compiled of practically all conditions, medical and surgical, on which ACTH has been tried, and the results obtained under ideal management. Questionable results are discussed in, for instance, multiple sclerosis, myasthenia gravis, alcoholism, refractory anemias, multiple myeloma and metastatic malignancy. Controversial issues are cleared up, such as the proven beneficial use of ACTH in extensive burns and in the treatment of repeatedly unsuccessful skin grafts. One careful study helps dispel the widespread fear of non-healing wounds when ACTH is used in surgical cases.

To the inquiring mind, both of these volumes provide stimulating reading. To the busy practitioner, Volume II can serve as an authoritative reference book when questions arise as to the expected efficacy of ACTH in certain disease states.—*A. G. Lueck, M.D.*

AMERICAN MEDICAL ASSOCIATION HANDBOOK OF NUTRITION, Second edition. Prepared under the auspices of the Council on Foods and Nutrition of the AMA. (The Blakiston Co., Philadelphia, \$4.50).

This volume is a symposium prepared under the auspices of the Council on Foods and Nutrition of the AMA. Leading authorities in the field of nutrition have contributed to the volume, and some of the material has been previously published in *The Journal of the American Medical Association*.

The work is divided into four parts. Part I, "Individual Nutrients," offers a complete discussion of the basic chemical and physiological aspects of the important food substances, vitamins and minerals.

Part II, "Nutritional Needs," discusses not only the nutritional demands of adults but also includes chapters on nutrition in infancy, childhood, pregnancy, lactation and in the aged.

Part III summarizes the facts concerning nutritional deficiencies.

Part IV is entitled "Foods and Their Nutritional Qualities" and discusses diet and the value of various foods of plant and animal origin.

This book is highly recommended as a volume which summarizes most of the important facts in the field of nutrition.—*W. Rindskopf, M.D.*

ALLERGY: FACTS AND FANCIES, by *Samuel M. Feinberg, M.D.* (Harper & Brothers, New York, \$2.50).

For the numerous people suffering from allergic diseases, this book explains in simple and nontechnical terms, the most recent facts, the causes, and the methods of management of hay fever, asthma, food allergies, hives, eczema and etc.

This book should be welcomed by all of those, who are seeking basic facts of allergic diseases. It should be recommended for patients as well as for physicians.—*J. Uchiyama, M.D.*

CLINICAL PEDIATRIC UROLOGY, by *Meredith Campbell, M.D.* (W. B. Saunders Co., Philadelphia, \$18.00).

This much needed textbook covers the field of clinical pediatric urology adequately. The subject matter is well correlated, and the chapters are arranged systematically. The text opens with a discussion of methods of examination and diagnosis, and leads into embryology and anomalies of the urogenital tract. Subsequent chapters consider the various broad phases of pediatric urology, namely, urinary infections,

obstruction, injuries and tumors. The problems of neuromuscular uropathy, enuresis and urologic surgery are well-covered. Another chapter consists of a discussion of the adrenal gland and its diseases. The chapter concerning nephritis and allied diseases, written by Elvira Goettsch and the late John D. Lyttle, definitely adds to the value of the general thesis of the pediatric urology.

This book is recommended for the pediatrician and the urologist alike. There is a wealth of splendid diagrams and illustrations. The text is well-written and contains discussions of controversial subjects as well as opinions formed by the author in his wide experience in this specialty.—*M. E. Alberts, M.D.*

A TEXT-BOOK OF X-RAY DIAGNOSIS BY BRITISH AUTHORS, Volume I, Second Edition, edited by *S. Cochrane Shanks, M.D.* and *Peter Kerley, M.D.* (W. B. Saunders Co., Philadelphia, \$12.00).

This book, one volume of three, is a standard work on the skull. It is not radically revised from the first edition. There are additions to the chapters on cerebral angiography, foreign body localization in the eye and radiography of the teeth.

For those having the first edition, there will be little call for purchasing a copy of the second, but those not fortunate enough to have the first edition will find this set by British authors a storehouse of cogently presented and clearly illustrated information.—*R. M. Kafka, M.D.*

CLINICAL HEART DISEASE, Fourth Edition, by *Samuel A. Levine, M.D.* (W. B. Saunders Co., Philadelphia, \$7.75).

The author's latest edition of *Clinical Heart Disease* is undoubtedly the finest text on heart disease available to the medical profession. The author needs no introduction as to his high standing among the world cardiologists. This volume is a practical tool and should benefit all physicians with their clinical practice. The material for this book was from the author's actual experiences in the Boston Hospital and his research laboratory at the Harvard Medical School. The chapters on electrocardiography have been extensively rewritten by Dr. Harold Levine, who has brought this laboratory test up-to-date. The experimental work of Dr. Frank N. Wilson and his Ann Arbor group is reflected in the contributor's comments on the electrocardiogram.

The present edition should not require my recommendation. All subjects are presented in such an interesting manner that the reading is more like a novel than a text book. No phase in the etiology, diagnosis and treatment of heart diseases has been omitted. The index is excellent and no time is lost securing any specific cardiac information. Every physician should have this latest edition in his library.—*G. H. Finch, M.D.*

IMMUNOLOGY, by *Nobel P. Sherwood, M.D.* (The C. V. Mosby Co., St. Louis, Mo., \$8.00).

This third edition is well organized and readable. The author, who is professor of bacteriology at the

University of Kansas, is a doctor of medicine and pathology and therefore is able to approach problems in immunology from a clinical point of view.

The book is broad in scope. Following consideration of basically important topics such as inflammation, infection, host-parasite relationships, immunity mechanisms, the leukocytes and the reticulo-endothelial system, the author discusses Rh and Hr factors of human blood, reactions to toxins and anti-toxins, serum reactions, specificity of immune reactions and hypersensitiveness.

When technics are presented or discussed, standard methods are followed. Discussions of several subjects are terminated by a summary, and the three chapters on specificity are followed by a recapitulation. The topic of specificity is considered to be of great importance in medicine because serological tests and many therapeutic procedures must be reasonably specific to be of value. In order to interpret such tests one needs a background of knowledge of immunology, factual and theoretical.

Almost any physician would benefit by reading this volume from cover to cover.—*R. F. Birge, M.D.*

THE 1950 YEAR BOOK OF ENDOCRINOLOGY (January, 1950-January, 1951), edited by *Willard O. Thompson, M.D.* (The Year Book Publishers, Inc., Chicago, \$5.00).

This is the first year book devoted entirely to endocrinology. The book is divided in sections, each dealing with advances in the respective endocrine gland. There is a special section devoted to potassium metabolism. This book is of great interest to those interested primarily in endocrinology but the general practitioner will find it of value in keeping him abreast with common clinical endocrine syndromes. The sections dealing with ACTH and cortisone are well written and contain valuable information that should be known by all physicians using these powerful therapeutic agents.—*E. T. Scales, M. D.*

TO PROSPECTIVE MOTHERS, by *William E. Hunter, M.D.* and *Bernard N. Smith, M.D.* (Bruce Humphries, Inc., Boston, Mass., \$2.50).

This is a book designed for reading by the expectant mother. It is written by two obstetricians and is both thorough and accurate but not too technical for the lay mind to understand.

The authors discuss the signs and symptoms of pregnancy, anatomy and growth and development of the pregnancy in short chapters. The next section is devoted to general prenatal instructions on diet, clothing, activity and other hygienic measures. A clear discussion of child birth in its three stages is well done. This discussion includes the more frequent complications and a description of the various modes of delivery.

The concluding chapters cover the post partum period and instructions for the care of the baby.

The book is well done and may properly take its place in the list of "books to read" the physician gives to his patient.—*P. K. Hughes, M.D.*

SOCIETY PROCEEDINGS

MEETINGS

Black Hawk

The regular meeting of the Black Hawk County Medical Society was held September 18 at the Mental Health Institute at Independence. The scientific portion of the meeting included a Trans-Orbital Lobotomy Clinic with two operations performed by Dr. H. Russell Meyers, Chief of Neuro-Surgery at the SUI College of Medicine, Iowa City; a Group Therapy Clinic by Dr. Max E. Witte, Independence, and a presentation of pathological material by Drs. Francis Tucker and Regis E. Weland of Cedar Rapids.

Dubuque

Members of the Dubuque County Medical Society met at the Golf Club September 11 in Dubuque. Dr. Michael L. Mason, Associate Professor of Surgery, Northwestern University Medical School, Chicago, Ill., spoke on "Early Care of Hand Injuries," and Dr. Stuart W. Harrington, Chief of the General and Thoracic Surgical Sections, Mayo Clinic, Rochester, Minn., spoke on "Surgical Treatment of Cancer of the Breast."

Johnson

Dr. Alson E. Braley, head of the SUI Department of Ophthalmology, spoke on "Glaucoma" at the Johnson County Medical Society meeting October 3 at the Hotel Jefferson in Iowa City.

Mahaska

Members of the Mahaska County Medical Society met September 10 in Oskaloosa to discuss preliminary plans for a six-county Crippled Children's Clinic to be held in Oskaloosa during November.

Marion

The Marion County Medical Society held its autumn meeting September 18 at the Veterans Hospital in Knoxville. Members of the Madison, Mahaska and Wapello County Medical Societies were guests. Dr. Rubin H. Flocks, Iowa City, spoke on "Cancer of the Prostate Gland," and Dr. William D. Paul, SUI Department of Internal Medicine, spoke on "Physiologic Basis for the Treatment of Poliomyelitis."

Page

Dr. J. Dewey Bisgard, Omaha, Nebr., spoke on "Chest Surgery" at the September 20 meeting of the Page County Medical Society at the Hand Hospital in Shenandoah.

Polk

Dr. Richard V. Ebert, Minneapolis, Minn., spoke on "Recent Knowledge of the Lesser Circulation" at a dinner meeting of the Polk County Medical Society September 19 at the Hotel Savery in Des Moines.

Washington

Members of the Washington County Medical Society held their regular monthly meeting September 19 at the Medical Building in Kalona. Dr. John S. Greenleaf, Iowa City, spoke on "Urological Problems Confronting the General Practitioner;" Dr. Webster Gelman, Iowa City, spoke on "Closed Reduction of Fractures"; and Dr. Horace M. Korn, Iowa City, spoke on "The Use of Anticoagulant Therapy and the EKG in Heart Disease."

Webster

Dr. H. Russell Meyers, SUI Department of Neuro-Surgery, spoke on "Low Back Pain" at the September 25 meeting of the Webster County Medical Society at the Hotel Warden in Fort Dodge.

Woodbury

The Woodbury County Medical Society held a dinner meeting September 20 at the Mayfair Hotel in Sioux City. The topic, "Drug Dispensing Laws," was discussed by Dr. Fred Sternagel, Des Moines, Chairman of the Committee on Medical Service; Mr. I. W. Myers, Legal Counsel for the State Society and Mr. Dallas Bruner, secretary of the Iowa Pharmaceutical Association.

PERSONALS

Dr. George S. Atkinson, formerly of New Orleans, La., has taken over the practice of Dr. Charles H. Merrill in Oskaloosa. A 1935 graduate of the University of Arkansas School of Medicine, Little Rock, Dr. Atkinson served his internship at the United States Marine Hospital, Norfolk, Va.

Dr. James B. Blair, formerly of Omaha, Nebr., has begun the practice of medicine in Storm Lake. A 1939 graduate of the University of Nebraska Medical School at Lincoln, Dr. Blair interned at the University of Nebraska and the University of Minnesota.

Dr. William A. Durham has begun the practice of medicine in Ainsworth. Dr. Durham is a recent graduate of the SUI College of Medicine.

Dr. Merton O. Johnson, formerly of Storden, Minn., will begin the practice of medicine in Nevada on December 1. Dr. Johnson was graduated from the Stritch School of Medicine of Loyola University, Chicago, Ill. in 1943.

Dr. Robert E. Jongewaard has joined **Dr. Lyal J. O'Brien** in the practice of medicine in Fort Dodge. A 1945 graduate of the SUI College of Medicine, Dr. Jongewaard served his internship and residency at the Iowa Methodist Hospital in Des Moines.

Dr. Carlyle C. Moore has begun the practice of general medicine and surgery in Estherville. A graduate of the SUI College of Medicine, Dr. Moore served his internship at the Letterman General Hospital, San Francisco, Calif.

Dr. LaVerne F. Grams, formerly of Hartley, has become associated with **Dr. Harley Feldick** in Buffalo Center. Drs. Grams and Feldick have purchased the facilities of **Dr. George F. Dolmage**, who recently retired.

Dr. Richard E. Munns has begun the practice of medicine in Alden. A graduate of the University of Kansas Medical Center, Kansas City, Kan., Dr. Munns served his internship at the Madigan Army Hospital, Tacoma, Wash.

Dr. Grace M. Sawyer, assistant superintendent at the Woodward State Hospital and School, has been appointed acting superintendent replacing **Dr. George M. Wadsworth**, who recently resigned to accept a position in Maryland.

Dr. Leland E. Stillwell, medical director at the Veterans Hospital at Jefferson Barracks, Mo., has been named director of the new Veterans Hospital in Iowa City. A native of New York, Dr. Stillwell received his medical training at Columbia University.

Dr. John E. Tyrell, formerly of Duluth, Minn., has become associated with **Dr. Richardson Clark** in Manchester.

Dr. Herbert L. Wormhoudt has begun the practice of general surgery in Ottumwa. A 1943 graduate of the SUI College of Medicine, Dr. Wormhoudt served his internship at the St. Mary's Hospital in Cincinnati, Ohio.

DEATH NOTICES

Dr. Frederick Joseph Chapman, 64, Keokuk physician for the past 32 years, died September 14 at the St. Joseph Hospital in Keokuk. He had been in poor health for almost a year. Dr. Chapman was graduated from the Memphis Hospital Medical College in 1912 and was a member of the Lee County and Iowa State Medical Societies at the time of his death.

Dr. John Lewis Cruzen, 75, Barnes City physician for 51 years, died at his home September 16, following an illness of several months duration. Dr. Cruzen was an 1899 graduate from the Hahnemann Medical College and Hospital, Chicago, Ill. Dr. Cruzen was a life member of the Mahaska County and Iowa State Medical Societies.

Dr. Rodney Pierce Fagen, 65, former Iowa Health Commissioner and Des Moines physician, died of cancer September 20 at the Mercy Hospital in Des Moines. Dr. Fagen was graduated from Drake University College of Medicine, Des Moines in 1912. He was a member of the Polk County and Iowa State Medical Societies.

Dr. Johnson Harper Kerr, 75, Akron physician for more than 50 years, died October 2, following a heart attack. Dr. Kerr was graduated from the University of Nebraska College of Medicine, Omaha in 1904. He was a member of the Plymouth County and Iowa State Medical Societies.

Dr. Elmer Lewis Lampe, 66, Bellevue physician, died September 22 at the University of Iowa Hospital, Iowa City, where he had been a patient for a short time. Dr. Lampe was a 1910 graduate of the State University of Iowa College of Medicine and at the time of his death was a member of the Jackson County and Iowa State Medical Societies.

Dr. Elbert Taylor Warren, 66, Stuart physician since 1915, died at his home on October 1. Dr. Warren was graduated from the Drake University

College of Medicine, Des Moines in 1910 and at the time of his death was a member of the Dallas-Guthrie and Iowa State Medical Societies.

ROSTER OF IOWA PHYSICIANS
IN MILITARY SERVICE

As of October 15, 1951

Ackerman, J. H., Clarksville
(Melbourne, Fla.).....Asst. Surg., U.S.P.H.S.
Alberts, M. E., Des Moines
(Des Moines).....Lt, U.S.N.R.
Ashby, J. D., Davenport
(Battle Creek, Mich.).....Major, A.U.S.
Bartholomew, R. D., Lake City
(Oakland, Calif.).....Lt. (jg), U.S.N.R.
Bartley, R. L., Sully
(FPO San Francisco, Calif.).....Lt, U.S.N.R.
Benge, D. K., Dows
(Ft. Leonard Wood, Mo.).....1st. Lt., U.S.A.
Baatelien, N. T., Des Moines
(Camp Carson, Colo.).....1st. Lt., U.S.A.F.
Brown, R. C., Mason City
(Kansas City, Kan.).....1st. Lt., A.U.S.
Camp, J. R., Thompson
(San Diego, Calif.).....Lt. (jg), U.S.N.R.
Carroll, T. J., Sibley
(APO San Francisco, Calif.)1st. Lt., U.S.A.F.
Carson, R. W., Winterset
(APO San Francisco, Calif.).....1st. Lt., A.U.S.
Coynce, K. M., Burlington
(FPO San Francisco, Calif.).....Cmdr., U.S.N.R.
Dalager, R. D., Ottumwa
(Annapolis, Md.)U.S.N.R.
Davidson, M. C.
(APO New York, N. Y.).....Lt. Col., A.U.S.
Davis, S. K., Des Moines
(Seattle, Wash.).....
Donahue, J. F., Fort Dodge
(San Antonio, Texas).....U.S.A.F.
Fitch, R. E., Des Moines
(Bangor, Me.).....1st. Lt., U.S.A.F.
From, Paul, West Des Moines
(San Antonio, Texas).....1st. Lt., U.S.A.F.
Gladstone, W. S., Jr., Iowa City
(Crestview, Fla.).....U.S.A.F.
Goenne, W. C., Jr., Davenport
(Tacoma, Wash.).....Major, A.U.S.
Gustafson, J. E., Des Moines
(Camp Roberts, Calif.).....1st. Lt., A.U.S.
Jensen, K. V., Newton
(San Antonio, Texas).....1st. Lt., U.S.A.F.
Johnson, A. A., Jr., Council Bluffs
(Ft. Worth, Texas).....1st. Lt., U.S.A.F.
Johnson, F. N., Madrid
(San Antonio, Texas).....1st. Lt.
Johnson, M. H., Iowa City
(Tacoma, Wash.).....Capt., A.U.S.
Keil, P. G., Des Moines
(Bangor, Me.).....Major, U.S.A.F.
King, R. E., Des Moines
(APO San Francisco, Calif.).....Capt., A.U.S.
Krause, R. E., Ottumwa
(Camp Atterbury, Ind.).....1st. Lt., A.U.S.
Kruse, R. H., Conrad
(San Diego, Calif.).....U.S.N.R.
Kurth, R. J., Waterloo
(Panama City, Fla.)Capt., U.S.A.F.
Landis, S. N., Des Moines
(Topeka, Kan.).....Major, U.S.A.F.
Leiter, E. R. K., Des Moines
(Bangor, Me.).....Capt., U.S.A.F.
McCrary, W. A., Lake City
(APO San Francisco, Calif.).....Capt., A.U.S.

Mangan, J. T., Forest City
(FPO San Francisco, Calif.).....Lt. (jg), U.S.N.R.
Merkel, B. M., Des Moines
(Bangor, Me.).....Col., U.S.A.F.
Mitchell, R. C., Iowa City
(Yorktown, Va.).....Lt., U.S.N.R.
Montgomery, A. E., Jefferson
(APO San Francisco, Calif.).....Lt. Col., A.U.S.
Mulder, L., Sioux Center
(Sioux Falls, S. D.).....Capt., U.S.A.F.
Neagle, P. E., Dubuque.....
Nicholson, R. W., Paton.....
Nordin, C. A., Des Moines
(Lackland Field, Texas).....1st. Lt., U.S.A.F.
Odell, J. E., Iowa City
(Seattle, Wash.).....Lt., U.S.N.
Piburn, M. F., Preston.....1st. Lt., A.U.S.
Ruble, R. L., Nevada
(Camp Chaffee, Ark.).....A.U.S.
Schultz, M. H., Waterloo
(Weaver, S.D.).....Capt., U.S.A.F.
Shaffer, F. J., Iowa City.....Col., U.S.A.F.
Simonsen, M. H., Sioux City
(Oakland, Calif.).....Lt., U.S.N.R.
Smith, C. B., Iowa City
(Fort Jackson, S. C.).....Capt., A.U.S.
Stutsman, R. E., Washington
(San Diego, Calif.).....Cmdr., U.S.N.
Taylor, H. N., Iowa City.....
Tempel, P. F., Steamboat Rock
(APO San Francisco, Calif.)Capt., A.U.S.
Thistlewaite, E. A., Des Moines
(Riverside, Calif.).....1st. Lt., U.S.A.F.
Thomas, J. H., Sibley
(Austin, Texas).....U.S.A.F.
Tice, W. K., Iowa City
(APO San Francisco, Calif.)1st. Lt., A.U.S.
Tyler, D. E., Shenandoah.....U.S.N.R.
Vincent, J. F., Fort Dodge
(Langley A.F.B., Va.).....Capt., U.S.A.F.
von Lackum, L. S., Oelwein
(FPO San Francisco, Calif.).....Lt., U.S.N.R.
Waldmann, W. B., Council Bluffs.....
Walz, D. V., Le Mars
(Weaver, S. D.).....1st. Lt., U.S.A.F.
Wehrmacher, W. H., Iowa City
(Oceanside, Calif.).....U.S.N.R.
Wheeler, R. A., Des Moines
(Camp Crowder, Mo.).....1st. Lt., A.U.S.
*Wilkins, D. S., Iowa City
(APO San Francisco, Calif.).....Capt., A.U.S.
Woolfolk, J. H., II, Waterloo
(Weaver, S. D.).....U.S.A.F.
Zeilenga, R. H., Orange City
(Kansas City, Kan.).....1st. Lt., U.S.A.F.

SPEAKER'S BUREAU RADIO SCHEDULE

WOI—Thursdays at 11:15 a.m.

GOLD MEDAL AWARDS

November 1 Rudolph Manger
November 8 James B. Harrick
November 15 Chevalier Jackson
November 22 James Ewing
November 29 Ludwig Hektoen

WSUI—Tuesdays at 11:45 a.m.

THE DRUGS YOU USE

October 30 Use and Misuse of Drugs
November 6 Germ Chasers
November 13 . Pain Killers and Sleep Producers
November 20 Laxatives and Indigestion
November 27 Skin Remedies

COUNTY MEDICAL SOCIETY OFFICERS

COUNTY	PRESIDENT	SECRETARY	DEPUTY COUNCILOR
Adair.....	R. E. Wiley, Fontanelle.....	A. S. Bowers, Orient.....	A. S. Bowers, Orient
Adams.....	C. L. Bain, Corning.....	J. C. Nolan, Corning.....	A. W. Brunk, Prescott
Allamakee.....	M. F. Kiesau, Postville.....	J. H. McCullough, Waukon.....	J. W. Thornton, Lansing
Appanoose.....	E. F. Ritter, Centerville.....	R. R. Edwards, Centerville.....	
Audubon.....	L. E. Jensen, Audubon.....	H. K. Merselis, Audubon.....	L. E. Jensen, Audubon
Benton.....	E. D. Lovett, Vinton.....	N. C. Knosp, Belle Plaine.....	E. D. Lovett, Vinton
Black Hawk.....	C. W. Seibert, Waterloo.....	G. D. Phelps, Waterloo.....	D. W. Bickley, Waterloo
Boone.....	T. E. Kane, Boone.....	H. C. Scharnweber, Boone.....	H. C. Scharnweber, Boone
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CARCINOMA OF THE BREAST, SYMPTOMS AND DIAGNOSIS*

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The major portion of responsibility for success in the struggle against cancer of the breast falls upon individual physicians in private practice. Essential requirements for success are early accurate diagnosis and the immediate institution of adequate surgical treatment. Carcinomas still limited to the confines of the breast are usually clinically indistinguishable from benign tumors, hence their clinical diagnosis is for all practical purposes the diagnosis of dominant lump. A dominant lump is one which varies from anything else felt in the breasts in size, consistency and differentiation from surrounding tissue. Between one third and one half of all such lumps are carcinoma; the diagnosis can be made early only if microscopic examination of a specimen secured by surgical biopsy follows the onset of first symptoms with a minimal interval of delay. The prognosis for long disease-free survival following extensive resections is of a measurably and completely different order for Group I carcinoma than for that with regional spread. A majority of American physicians must be familiar with the concepts here expressed, for they represent a summation of modern knowledge of the disease. Experience with patients coming to our clinic secondarily, however, indicates that some physicians fail either to know, to believe in or to practice in accordance with these concepts.

The physician who defers or fails to advise biopsy upon the discovery of a dominant breast

lump indicates a confidence in the accuracy of the clinical diagnosis of benign disease of the breast, which our experience indicates to be unjustified. Our prebiopsy diagnosis has been benign disease for about one third of our clinical Group I cancers. Delay in biopsy, based upon satisfaction with what seemed to us a good diagnosis, could have led to the perpetration of disastrous error. In order that surgical biopsy *will* be performed whenever anything which *may* be carcinoma is seen or felt in the course of examinations of the breasts, clinicians must make presumptive clinical diagnoses of carcinoma in those instances. In the interest of decrease in delay, the physician should keep in mind those features of his conduct throughout the history-taking and examination which can cause his patient either to accept him or to reject him and his advice completely. He must avoid expression or semblance of too great optimism or undue alarm and should make clear the firmness of his position when he tells his patient that *no* physician could make a satisfactorily accurate diagnosis in her case without microscopic examination of tissue.

We intend to discuss here some of our experience with the inaccuracy of clinical diagnosis and with a routine of diagnostic management which we believe insures biopsy for every lesion which may be discoverable carcinoma. Observations were made upon a series of 852 patients consecutively admitted to our clinic because of complaints referable to the breasts; they were all either indigent or from low income groups and 74 per cent of them were Negro. All patients who were not biopsied were followed for at least one year in the clinic. Surgical biopsy was performed upon 564 patients, including 425 who had dominant lumps. Two out of five lumps were cancer; one in 15 was localized carcinoma. Clinically we mistook one third of these early cancers to be benign disease; of those we felt surely to be cancer, one-tenth were found at biopsy to be benign tumors. Twenty-eight per cent (236) of the total number of patients had carcinoma (one in seven of these had had operations elsewhere for the same disease). Twenty-three per cent had a variety of benign tumors, 17 per cent fibrocystic disease; 15

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per cent fibroadenoma; 13 per cent non-puerperal inflammatory disease and four per cent no demonstrable disease of the breasts. Eighty-four (35.6 per cent) of the patients with proved carcinoma were submitted to extensive resections, 50 (20.4 per cent) to simple mastectomy and 102 of them (44 per cent) had no surgical treatment other than biopsy.

The diagnosis of carcinoma begins with attention to particular presenting complaints. For 92 per cent of our patients with carcinoma, the admitting complaint was lump or painful lump, and the percentage incidence of cancer within that complaint was greater than for the total of all complaints. Two thirds of the women with this complaint discovered painless lumps accidentally. Those who had delayed longest in seeking advice said they did so because the lumps did not hurt. One third of them either found the lumps because of associated pain or tenderness, or were led to come in because a previously painless lump began to be hurtful. Cancer was found in 19 per cent of patients who had nipple discharge or bloody nipple discharge as a primary complaint. Thirty per cent of the patients who presented the complaint of rash or eczema of the nipple had cancer. We have not found previous history of breast dysfunction or disease, of breast disease or cancer as a family occurrence, to add appreciably to our diagnostic accuracy. We do consider, however, that the occurrence of the symptoms *lump*, *nipple discharge* or *rash* of the nipple should alert us to make a most thorough examination of both breasts and the regions of early metastatic spread. Inspection of the breasts is the first and most important part of that examination, since the earliest findings liable to differentiate malignant from benign lumps are visible ones.

The patient is first examined sitting, in a good light. Abnormalities of contour, both of the breasts and of the nipples and areolae are searched for by altering the positions of the patient and the light. Contour changes seen on slow raising of the arms, deviations in nipple level, in the rhythm of nipple elevation or the symmetry of the angle of nipple-pointing are noted. Similar observations are made while pectoral muscles are contracted and relaxed. She is asked to bend forward with her chin well held up so that contour changes caused by falling forward of the breasts may be noted. After she has been placed in the supine position and the breasts are being palpated, they are gently manipulated in the attempt to bring out the slight flattening or dimpling which marks the earliest infiltration of Cooper's ligaments. Gentle compression of the skin toward the lump may show skin adherence not demonstrable by any other maneuver. Much can be learned by careful inspection which the physician may miss if he proceeds directly to palpation of the lump of which his patient complains. Ability exactly to touch the tumor after inspection and without preliminary feeling around is an extremely helpful sign;

if it then feels quite close to the finger or gives the sensation of ballotment ("proximate" feel), one more strongly suspects that it is carcinoma. Signs of carcinoma are sought by inspection of the opposite breast, the axillae, supraclavicular spaces and upper abdomen. The traditional signs of carcinoma are those of advanced disease, and their presence is not of value in the diagnosis of early cancer. Dimpling, pucker, plateau sign or nipple change may occasionally be present because of infiltration of Cooper's ligaments by mild chronic inflammatory change adjacent to benign tumors. Unless biopsy precedes definite operation, even for what seems thus to be obvious cancer, one might perform unwarranted mastectomy for these patients. We made such error in the clinical diagnosis of carcinoma in eight per cent of the cases so diagnosed.

Palpation should be gentle and thorough with recollection of the known possible extent of breast tissue as high as the clavicle, to the midline, down onto the rectus fascia and as far laterally as the anterior border of the latissimus dorsi muscle. The axillary extension of the upper outer quadrant often reaches around the free border of the pectoralis major and up into the axilla. During the examination, the patient is instructed in the method of similar, self-performed, monthly examination of her breasts, which can result in the earlier discovery of lumps in the future. Some lumps beneath the areola or deep in obese breasts may best be felt with the breast between, instead of under, the fingers, but in general palpation is best accomplished with the patient supine. Usually one breast may be spread more evenly upon the chest wall by placing a small pillow under the corresponding shoulder. The routine of palpation may progress either segmentally or circumferentially, feeling with the flats of the adducted fingers.

Granularity or nodularity of portions or all of one or both breasts may be found from adolescence until well past the menopause. The most common sites for such changes are the upper outer quadrants, less often the inferior hemispheres. Thickenings without granularity or nodularity may be found as localized areas of increased density. Such swellings may occasionally involve one lobule; their outlines and the usual doughy feel may be suggestive of their character and dependence upon clogged ducts. Premenstrual pain or tenderness is usually located in areas such as have just been described. If any part of such changes can be defined as a dominant lump, it should be subjected to biopsy. The findings in the absence of dominant lumps are generally due to the group of mastopathies grouped as chronic cystic mastitis. We have not found their occasional association with carcinoma necessarily to indicate a sequential relationship, but wish to warn particularly against the assumption that a dominant lump in such a breast must be a cyst.

Palpation of the nipple and areola is a separate

procedure. The nipple itself is gently compressed between the fingers, and notation made of the location of the openings of the duct or ducts from which discharge may be expressed. If the complaint has been of nipple discharge and nothing is able to be expressed from the terminal ducts, gentle compression is applied circumferentially at increasing distances from the nipple. Pressure upon a single spot with one fingertip may cause material to issue from one duct. The location of this spot and of the involved duct opening is recorded. It is our experience that similar significance attaches to serous, bloody or rusty discharge. We have not seen discharge of other color or consistency to indicate cancer. The comparative elasticity of the nipples is noted. In women who have had long-continued, low-grade inflammation in the terminal ducts, a firm cord-like mass may be felt centrally, which restricts the distance to which the nipple may be pulled out. Palpation of the axillae may be done with the patient sitting or supine; the location of lymphatic chains must be kept in mind, and the arm and shoulder must be relaxed. The supraclavicular fossae are best palpated from behind with the patient sitting.

Dominant lumps differ in their characteristics, but we have not found that any one of several of these variations is accurately diagnostic for cancer. Fibro-adenomas are often anteriorly extruded from the mammary gland surface, yet they do not often feel as close to the examining finger as may a small carcinoma, surrounded by pulled-in fat, which has infiltrated Cooper's ligaments even minimally. We have been unable to differentiate them from cancer on the basis of their firmness. Other tumors seldom show the ability of fibro-adenomas to slip out from under the fingers (poppability), but a fibro-adenoma still enclosed by breast tissue may be as indistinctly outlined and craggy-hard as carcinoma. We have found 28 per cent of them to be either tender or painful. Cysts may be less movable, more elastic and less well-differentiated from surrounding tissue. A hard carcinoma in an atrophic breast may simulate fibroadenoma in mobility, but seldom in the circumscription of its margins if breast and tumor are palpated against the chest wall. Cysts may conceal carcinomas, and some carcinomas such as the mucus-producing type may be softer in consistency than cysts. Associated retraction signs do not enable a certain diagnosis of the nature of the tumor felt. **THE DECISION THAT A DOMINANT LUMP IS PRESENT CONSTITUTES AMPLE INDICATION FOR BIOPSY.**

When no lump is found, but the complaint and/or the findings have been of nipple discharge, the subsequent procedure should be such as to miss no early carcinoma, nor willfully to perform unnecessary, mutilating surgery. This situation calls for a method of discussion with the patient so that she will not be lost to follow-up after the first visit. If one leaking duct can be located, a blunted needle may be passed into it

after the method of Babcock, under general anesthesia and with the patient prepared for whatever surgery will be necessary. The duct is then incised or the entire duct, visualized by reason of distension and the color of the contained fluid, may be excised. We are unable to advise confidently what should be done in the cases of young women with multiple leaking duct openings, but we do not believe that they should have surgical treatment if the discharge is milky, cheesy or of bizarre color. Some of these clear up with dilatation of the duct orifices and daily gentle milking; some eventually require incisions of the terminal lacteal ducts. We have not hesitated in the cases of women past the menopause, without dominant lumps, but in whom we could not locate one leaking orifice or canalate one if found, to propose and carry out partial mastectomy including nipple, areola and subjacent ducts. We have so far found no carcinomas in such excised portions. We have found, however, that many patients with nipple discharge to whom we do not immediately propose surgical investigation fail to return after the first visit, and that if they do return they become increasingly resistant to the idea of diagnosis by surgery. The percentage incidence of carcinoma found for this complaint is much less than such incidence for all complaints, but half the carcinomas found with the primary complaint of nipple discharge have been Group I lesions. There is great variation in the reported incidence of carcinoma in the breasts of patients with nipple discharge; we do not believe there is statistical value in our figures on a small series of cases. The physician confronted with this problem is dealing with an individual patient and not with statistics and should remember that carcinomas so manifested are liable to be early and potentially curable. Effort to make an early certain diagnosis for such limited carcinomas is certainly more profitable than that to increase the extent of the surgical effort against later stages of the disease.

Patients who have been admitted to the clinic because of rash or eczema involving both nipples, or of one nipple and areola, without palpable lump, have not had carcinoma. Highest suspicion attends small lesions on the apex of the nipple. If no lump is felt, it is reasonable to treat the skin erosion for one month with a bland ointment, then to re-examine and biopsy if skin change is still present. In the presence of concomitant lump, both nipple-skin and lump should be subjected to microscopic study.

We have been unable significantly to increase the accuracy of our clinical diagnosis of breast cancer by means of infra-red or x-ray photography, transillumination, Phosphorus-32 determinations or aspiration biopsy. The latter has seemed to us to be useless because of the high percentage of false negatives which we noted, and harmful because of its lack of both bacteriologic and cancer asepsis; we have no experience with Papanicolaou stains of nipple discharges. Excision and quick

frozen section have been proved by subsequent paraffin section to be accurate in 98 per cent of cases in our clinic. Until some method or combination of methods can be shown to approach that degree of accuracy, we must consider information secured by any other means as of inferential value only.

The several preceding paragraphs have indicated the brevity of reflection necessary before advising biopsy when a lump is found, and something of its desirably greater extent when nipple-discharge or nipple-erosion exist without palpable lump. Thoughtful and considerate physicians will weigh carefully the manner in which they must present the need for biopsy to individual patients, so as, at the same time, to allay unreasonable cancer fears and promote in each patient the desire for immediate certain diagnosis.

If definitive surgery for carcinoma is to be done immediately following positive biopsy, there will be no time between the two operations to search for metastases. Hence thought of their possible presence is rightly a part of the prebiopsy diagnostic procedure. In order, one should think of the opposite axilla, the supraclavicular spaces, the opposite breast, the liver, lungs and skeleton. For patients with lesions truly likely to be Group I carcinomas, but who have no bone or joint pain, films of the chest for soft part detail, and with the Bucky diaphragm for rib detail should be sufficient pre-operative checkup. If there is evidence of remote metastasis and the tumor is a carcinoma, it should be clearly understood that the definitive surgery undertaken is strictly with palliative intent. The physician should remember that the microscopic nature of presumed metastases must be proved if they are surgically accessible.

We have used excision biopsy except in the case of enormous tumors. Unless the tumor pops into view with the incision of the skin, the lump is excised with a wide margin of apparently normal breast tissue. If any retraction signs have been present, an ellipse of skin is excised with tumor and breast tissue. The operator leaves the table and incises the tumor for gross examination; he does not return to the field of operation. The sections made on the freezing microtome are examined by ourselves and the surgical pathologist of the hospital. We do not hesitate to await 24-hour paraffin sections in those few cases in which it is impossible to cut satisfactory frozen sections, or to make a decision on the rather thick sections cut. We feel that statements about the unsuitability for breast surgery for hospitals without resident pathologist and facilities for frozen sections overlook the present economic and social conditions governing patient-physician relationships and lead to no solution of the problem of early diagnosis. We have

advised physicians from such hospitals to make arrangements with the nearest competent pathologist to receive an abstract of history, of clinical findings and the entire biopsy specimen for procurement of 24-36 hour paraffin sections, if the lesion removed at biopsy is anything other than a smooth-walled cyst in otherwise normal breast tissue or an easily identified lipoma or fibroadenoma. Definitive surgery can then be done 48 hours following biopsy. If an excision biopsy has been done, it is hard to see how this much delay can exert a deleterious effect except with regard to the psychic state of the patient. The physician who has maintained the idea that definite diagnosis must await microscopic examination, and that should the lesion be a harmful one, it is still at an early and favorable stage, will have minimal difficulty in controlling the situation. All biopsies upon the breast are performed under general anesthesia.

SUMMARY

Carcinoma confined to the mammary gland or limited in its spread to minimal axillary extension shares symptoms common to benign tumors. The diagnosis can be made with sufficient accuracy to determine adequate definitive treatment only by surgical biopsy. Results observed following extensive surgical resections for early carcinoma are better by at least two to one than those seen following the same type of treatment for more advanced stages of the disease. Opportunity to operate upon greater numbers of patients with circumscribed disease with expectation of higher percentages of five-year cures depends upon avoidance of delay between the occurrence of the first symptoms and the time at which an exact diagnosis of cancer is made and adequate treatment prescribed. Physicians have the responsibility of teaching their patients the method of periodic self-examination of the breasts, and of advising, insisting upon and performing surgical biopsy whenever they discover findings which may lead to an eventual diagnosis of breast cancer. The observed unreliability of clinical diagnosis is described, and the experience of the Breast Tumor Clinic of the Cook County Hospital with correlation of symptoms, findings, clinical and final microscopic diagnosis is presented. A routine of diagnostic procedure is outlined: LISTEN (to the complaints and history of the patient); LOOK (at the involved breast and the whole patient); FEEL (both breasts and the regions of possible metastatic spread); THINK (of probabilities and of the patient as other than a possible statistic) and ACT (do a surgical biopsy in every case in which a dominant lump is found). At the Cook County Hospital limited resection of the breast (simple mastectomy) is employed when only palliation is to be gained by surgical intervention. Extensive resection of breast, muscles and axillary contents is employed when it is considered that hope of cure exists.

ACUTE CHOLECYSTITIS IN THE AGED

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WATERLOO

It is the purpose of this paper to attempt to arrive at a rational surgical approach in the treatment of the acute gallbladder. It must be understood that I am restricting this discussion to the acute cholecystitis of the aged. We believe moreover, that this can be further narrowed down to the acute calculous gall bladder, as stones are almost inevitably found in the diseased cholecystitis of the aged. It is a fallacy for you to believe that there will be any startling changes in the fundamentals of surgery in this discussion. Surgery of the acute gallbladder, although we recommend some deviation in the pattern of management, must follow the same lines as in any acute surgical condition. There shall be no radical departure from the accepted cardinal rules of surgery, nor any substitute offered in the standard technics which have proved the test of time.

Always in our decisions as to the choice of treatment, we should chart a course with a mind positive today, but flexible tomorrow, as to our procedure. Naturally, our conclusions should depend upon the experimental work of numerous investigators and on the clinical experience of surgeons in the larger medical centers. In this problem of cholecystitis there is not yet an overall consensus of opinion, and honest differences still persist. I am sure there are many here today who are convinced that conservative management is the treatment of choice in acute cholecystitis, while there are just as many or more, who are just as positive that early operation is the only answer to this problem.

In this confusion of thought no doubt part of the explanation lies in: (1) the large increase in the number of older people in our communities; (2) a greater latitude practiced in surgery because of the discovery of antibiotics and the use of whole blood; (3) the safety factor, in the development and the advancement of anesthesia and (4) the awareness of the public itself to the lessening of the surgical hazards. All of this has happened in a relatively short span of years and has not allowed for a correlation of statistics and a uniformity of thought in the approach to this surgical condition.

We are all aware of the changes in medicine in these past few years. In an attempt to keep in tune with these medical advances we are constantly rearranging our routines and our methods. Always these advances must be predicated upon sound theory, experimental evidence and clinical experience. It is thus with cholecystitis and, as a result, in recent years, there has been an increasing trend from the conservative management to the early operation, in our care of the aged.

Echel¹ recently stated that in 1910 Halstead and Heuer practiced cholecystectomy in the acute stage. Dr. George J. Heuer then went on to advocate early intervention when marked conservatism was the recognized treatment of choice at this time. Glenn,² at New York Hospital, has been one of the most ardent disciples in this comparatively recent approach. He has preached early operation consistently. He established a criterion to follow in this surgical field, and although cholecystectomy was always the operation of choice, he revived cholecystotomy.

It was Glenn, also, with others, who believed that cholecystitis in the aged is a distinct clinical entity and must be treated as such, in comparison with cholecystitis in the younger age group. In these older people, each patient must be carefully studied: his acute condition, his operative risk and especially the concurrent disease present. These most common associated diseases of the aged are: hypertension, arteriosclerosis, cardiac-disease, renal-disease and diabetes.

Any of these conditions, or any combination, when present, must be given special attention. I am sure that the removal of the diseased gallbladder is the operation of choice, although knowing that it may prove hazardous, while complicated by any of the above diseases. For the fact remains that the conservative treatment, with its resulting perforation, in a large percentage of cases will often prove fatal. If, however, the patient does survive this conservative management, later, at operation, the surgeon frequently finds pathology so massive that this is difficult to repair. Here also the same hazard prevails as in early operation, because of a long time consuming operation in an aged debilitated patient. This, then, was the rational basis for the revival of cholecystotomy. This operation allows the release of the attending infection and, as a result, there is a marked limitation of that upper abdominal pathology which would follow conservative therapy. Also, in this approach, and again keeping in mind the concomitant diseases of the aged, we assure you that we are not advocating emergency operation, only an early operation.

This early operation may mean a waiting period of only several hours or the period may extend many days, while the suggested evaluations of the patient are made to prepare him for a more favorable time.

When we consider that metabolic and endocrine factors play important parts in the formation of stones, and when it is added, the fact that low fat intake and sedentary habits, common in older people, are exciting causes to disturb the balance of cholesterol crystals with the formation of stone, it is not difficult to understand the great number of the aged who are found with gallstones.³ Crump, of Vienna, found that at autopsy 22.5 per cent of males and 28.5 per cent of females, over 40 years of age, have gallstones. Rosenthal⁴

found approximately 40 per cent of all people, past 60 years of age, to have calculi in the gallbladder. This should make us all more alert to the frequency of this condition today. Gallstones are a common disease of the aged. But again, may I repeat, that Glenn² is convinced that rarely do we see the aged patient as a primary disease, nor do we see him in his initial attack of cholecystitis. A patient, past 50 years of age, when seen as an acute gallbladder case, is presented as an acute exacerbation of a long standing chronic disease of the whole biliary tract and should be accepted and evaluated upon that basis. If possible, it is certainly most logical, in any surgical condition, to remove all of the pathology as the best prevention of continued infection. The greatest morbidity and mortality follows after there has been a progressive growth of infection, resulting in focal gangrene, perforation and massive pathology.

Since cholecystectomy, in itself, is such an extreme risk in some cases, the attempt is made by cholecystotomy to relieve the active infection and allow restoration of liver function. This has proven its merit as a treatment of choice in early operation.

Experimental studies⁵ have shown that a proper concentration of bile salts and an adequate balance of bile fatty acids act as a constant deterrent to infection in the gallbladder. It has also been shown that the lowest incidence of positive cultures taken, was during the first 24 to 48 hours in an obstructive cholecystitis. Womack⁶ and his colleagues state, in their observation, that it is evident, that perforation in the gallbladder prior to the fourth day after obstruction, is an unusual thing. In a series of experimental studies, by ligating the cystic duct, so that this simulates obstruction of the duct by stone, acute cholecystitis was produced. They were convinced that the factors which produced acute cholecystitis were: (1) Obstruction of the cystic duct; (2) Action of bile on the gallbladder wall and (3) Occasional secondary presence of bacterial infection, which would be superimposed on chemically damaged tissue.

It was their conclusion that the role of the bacteria depended upon their presence in the gallbladder, their virulence and the severity of the chemical damage. Since early simple acute cholecystitis is a chemical reaction, early cholecystectomy is the operation of choice. Thereafter, because of the infection and the high incidence of focal gangrene, one should defer the operation until several weeks have elapsed, keeping a close observation of the patient.

This is convincing proof of the part bile plays in the etiology of the acute cholecystitis. Since the onset, in the primary condition of acute cholecystitis, is a chemical reaction, followed by the invasion of bacteria in three to four days, there should be no argument as to early surgical inter-

vention. However, as pointed out before, (2) Glenn has stated that in the aged rarely do we see primary cholecystitis, but the patient is presented as an acute exacerbation of a chronically diseased gallbladder. This, indeed, may be further complicated by an obstructive jaundice with common duct stone. Here adequate balance of bile salts has not been maintained, invasion of bacteria has existed for some period of time, liver damage is already present, and the glycogen content of the liver is diminished. Remember always that we are dealing with cholecystitis in the aged, who, also, have their concomitant diseases. We must be aware that the reserve of the aged cannot be compared with the reserve of the younger patient, in his ability to compete with overwhelming infection. Again, in our use of blood and the antibiotics, which are necessary adjuncts in the treatment, we are all clinically conscious that they do not offer the relief which is so often seen in the younger patient with a primary condition. Naturally it is impossible to organize all of these factors into an orderly array of hard and fast rules of surgical procedure. The evaluation of each patient is the only solution. A careful analysis should be made of the complications, and of the concurrent diseases of old age, with a hope of some restitution of the patient to a good risk patient.

Restoring a careful balance by intravenous fluids, glucose to the liver cells, and using other preoperative procedures with which you are all familiar, is essential preparation.

In a general way then, we would follow these lines in early operation:

1. Given a patient—moderate elevation of blood count—moderate elevation of temperature—localized cholecystitis — fair to good general condition—: operation within 24 to 48 hours with ordinary preparation. Operation of choice: Cholecystectomy. If not in good condition— and attempt to correct the concomitant disease— careful watching, and if no progress in signs or symptoms, await a favorable time for cholecystectomy. If there is an elevation of both temperature and blood count, and an increase in clinical signs, a small incision is made and a cholecystotomy performed.

2. Given a patient acutely ill—peritoneal signs marked and extensive—blood count 20,000 or higher, with polymorphs in the neighborhood of 90—operation within a few hours. This is an emergency—only a cholecystotomy is done; unless cholecystectomy appears to be a simple, non-shocking, procedure. Naturally a gangrenous gallbladder, perforation and generalized peritonitis do not permit extensive surgery.

3. Given a patient—obstructive jaundice necessarily must await prothrombin control before intervention. The interval must be long enough, until you are assured by proper blood studies that this hazard has been overcome. Here again operation would depend on the severity of the

illness and the progress of the patient. If the infection is progressive, cholecystotomy after a few days may relieve back pressure; drainage is instituted, and stones may be removed at a later date. As you all know acute cholecystitis with obstructive common duct stone is not common; but when found, cholecystotomy may be life-saving as an early conservative procedure.

4. We believe the extreme aged, that is, in the late seventies or past the eight decade, does not tolerate long procedures. This is also true of the obese, aged person, where the exposure needs must be wide, and the operation is more difficult and time-consuming. Cholecystotomy here is the operation of choice, unless these patients can be carried for several days, or weeks, until they become excellent operative risks. Naturally just as the time of operation is decided by the judgement of the surgeon, so also the type of operation should be selected, which is the best in your hands, and which you think gives your patient the best chance for survival. However, with extensive adhesions present, the danger of trauma to surrounding organs, massive pathology, a long tedious operation with prolonged anesthesia and its attending shock, it does not seem sensible to attempt cholecystectomy in this aged patient.

Again may we reiterate what Glenn has said: that, although early operation is advocated, this does not mean emergency operation. But certainly a time can be arrived at somewhere, between the proponents of emergency operation and those that insist on conservative treatment; this, we believe, will best correct the condition and allow the patient a happy outlook.

The management of any surgical condition does not end with operation but must continue with adequate postoperative care, and, when possible, the anticipation of certain complications. In the follow-up of acute cholecystitis one must expect the same complications as may occur in any other major procedure. Most of these complications, you as surgeons, are meeting with daily. There are a few exceptions in gallbladder diseases to which I would recall to your minds. The assurance of success in postoperative treatment should be based on some understanding of the changes occurring in the physiology and the pathology of the biliary tract.

As was discussed earlier in this paper, infection is probably the greatest and most common offender. Cultures taken at the time of operation will avert some of the complicating conditions. Numerous investigators⁷ have shown that *escherichia coli*, *streptococcus viridans*, hemolytic *streptococcus*, or *staphylococcus aureus* are the offenders most commonly found. In fact, cultures taken in a large series of acute gallbladders removed, when the condition had been present 48 hours or longer, showed either one or a combination of the bacteria, were found in from 50 per cent to 60 per cent of cases. These reports

are based on figures from numerous investigators. When it is noted that penicillin is a specific in this type of infection, there should be no hesitation in its early use.

Following operation the causative infective organism can be isolated by culture. If necessary, then, the agent most effective in inhibiting the growth of this specific organism may be substituted for the penicillin.

Snell,⁸ in an analysis of liver function, based his treatment on the derangement of one of these four vital functions:

1. Postoperative Cholemia—This is a progressive failure of the excretory function of the liver. This is manifested by a progressive increase in jaundice, a diminution of the output of bile and urine, lethargy, and coma. The concentration of serum bilirubin rises progressively, and there is often a parallel rise in urea and nonprotein nitrogen. An anoxemia develops here as in other complications incident to liver damage. Correction lies in the administration of large amounts of glucose in order to restore the normal hepatic content of glycogen. Plasma protein should be balanced and oxygen given.

2. Postoperative Cholorrhea—This is manifested by a profuse drainage of thin watery bile a few days following operation. This contains large amounts of sodium chloride and mineral base, and may average five to six litres a day. The amount of blood urea and nonprotein nitrogen rises; but there is a marked fall in the blood chloride. Here the level of the serum bilirubin remains constant. This complication should be met promptly. If not, renal insufficiency with a fatal outcome will develop in a few days. A fluid balance is best established by the administration of not only glucose; but large amounts of physiologic solution of sodium chloride should also be given.

3. Hepatic Coma, Hepatic Insufficiency or Hepato-Renal Syndrome is not yet fully understood. This may occur suddenly or come on as a terminal condition of either cholemia or cholorrhea. This condition is manifested by confusion and disorientation. Irregularities of respiration and an associated high temperature may be present. Treatment is instituted with the basis of glycogen deficiency, protein imbalance and avitaminoses, as being causes. It is suggested that both glucose, and transfusions, be given. Vitamin B in large amounts and calcium gluconate are added. Oxygen is again instituted. The prognosis is grave.

4. In the management of the hemorrhagic diathesis so much has been written and discussed in recent years concerning vitamin K, that you all have a wide knowledge of the mechanism of prothrombin deficiency control.

All four of these complications are more common in long standing cases and in obstructive cases due to neglected stones in the common duct. And, although in evaluating your patient, prophylactic methods may be used to overcome these

anticipated complications in the aged, they may occur suddenly out of a clear sky. However, we do believe that early cholecystotomy, as a decompression operation, will do much to decrease the incidence of these serious problems. We should recognize that this aged patient today presents a challenge to your surgical judgement and your surgical skill.

In closing may I stress these requisites in the management of acute cholecystitis of the aged. I am sure you will agree that our only cure is surgical intervention. We believe that early operation is the operation of choice. A careful analysis and evaluation of each individual must be made. The time and the type of surgical procedure must be dictated by your good judgement. Herein, then, lies success. But the responsibility does not end in the operating room. It is dependent on each of us that we continue our care postoperatively. We must correlate with the internist, the bacteriologist and the laboratory; being ever vigilant as to the complications, then meeting them promptly and intelligently.

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DIAGNOSIS AND SURGICAL TREATMENT OF POSTERIOR WALL DUODENAL ULCER

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Duodenal ulcer is the most common organic disease of the duodenum, and is variable in its clinical manifestations. It may produce mild symptoms that are readily controlled by simple modifications of diet and habits of living; it may produce symptoms so severe as to incapacitate the patient and require extensive medical and surgical treatment to bring relief; or it may produce death through complications such as perforation, hemorrhage or unrelieved obstruction. These variations depend upon many factors, some anatomic and some functional. Among the anatomic factors is the location of the lesion, whether it is on the anterior or posterior wall of the duodenum. The dramatic acute perforation of an ulcer usually occurs in a lesion on the anterior wall, though it can occur in a lesion on the posterior superior wall. Penetration and perfora-

tion of a posterior wall lesion may produce a secondary pancreatitis, with symptoms of severe pain, partial obstruction from inflammatory reaction, or severe massive hemorrhage from erosion of the pancreaticoduodenal artery.

Most duodenal ulcers occur on the posterior wall of the duodenum. This was demonstrated many years ago by the post-mortem studies of Robertson, and has been confirmed by the experience of surgeons at the operating table, particularly since gastric resection has been in vogue for the treatment of the disease. Hinton¹ recently reported an incidence of posterior wall ulcers in 88 per cent of cases in which resections had been done. This was in contrast to an incidence of 45 per cent of posterior wall lesions in patients operated upon during the years when he was doing gastroenterostomy as the operation of choice. The difference is accounted for by the difficulty in palpating a lesion through the unopened duodenal wall; consequently many posterior wall ulcers went unrecognized. In about 15 per cent of cases there will be ulcers on both the anterior and posterior walls.

There are two important facts about a posterior wall penetrating ulcer that have a significant bearing on treatment. First, it is a complicated ulcer, and second, there is usually no direct correlation between the extent of the pathologic process and the severity of the symptoms. The ulcer is penetrating the bowel wall and may actually perforate it so that the base of the lesion is formed by the adjacent organ, most commonly the head of the pancreas. There will be a variable amount of inflammatory reaction involving the duodenum and pancreas, at times extensive enough to produce a large tumor mass. There may be constriction of the duodenum by the tumor mass, the so-called inflammatory type of obstruction. There may be little inflammatory reaction but deep penetration and erosion of blood vessels resulting in massive hemorrhage.

The diagnosis of a duodenal ulcer, complicated or uncomplicated, is usually not difficult and is made on the basis of the clinical history and X-ray examination. In the typical case there is little difficulty in reaching a decision on the basis of the history alone, though X-ray examination should be used for confirmation. The periodic occurrence, usually in the spring and fall of the year, of attacks of indigestion coming two to four hours after meals, relieved by food and alkali, and being repeated with a certain uniformity for days or weeks, is characteristic of ulcer. There are many cases, however, in which the symptoms are not typical and it may be difficult to elicit a clear cut story. Furthermore, when complications such as penetration of the ulcer occur the usual symptoms may be overshadowed by the predominance of one particular symptom.

Rivers² studied the clinical manifestations of

ulcer in relation to the pathologic anatomy and concluded that the symptoms caused by an ulcer "usually maintain their original characteristics so long as there is no decided change in the morbid anatomy of the lesion. When the ulcer deeply invades the wall of the viscus so that the serosa and subsequently the tissue surrounding the intestinal wall are invaded, the characteristic picture of peptic ulcer becomes distorted." The pain of a small superficial ulcer is usually ill defined, not accurately localized and at times transient. It may be described only as a distress or discomfort, or as a feeling of gas. When the deeper layers of the duodenum are invaded the symptoms are more definite, the pain is more accurately localized in the upper abdomen and may be so severe as to require morphine for relief. When the ulcer perforates the bowel wall and adjacent structures are involved, the pain is more severe, more constant, and there may be the onset of referred pain, which may be in addition to, or may supplant the original pain. The pain is referred to the upper right quadrant in the region of the liver, to the right subscapular area or to the right side of the chest. This referred pain may be predominate in the story and may be so severe as to simulate gallstone colic. With the onset of this penetrating type of pain there may be other changes in the symptoms, such as less tendency to intermittency, less relief from food and alkalis, the onset of night pain and localized tenderness over the right upper quadrant. With the development of obstruction there is distortion of the usual ulcer syndrome in that the pain—food—ease sequence may be lacking and the retention type of vomiting occurs.

Hemorrhage occurs in approximately 20 to 25 per cent of cases of duodenal ulcer at some time in the course of the disease and is most frequent in posterior wall lesions. It may be mild or severe, and it may be the outstanding symptom of the disease. It may be manifested by hematemesis and melena or by melena alone. A massive hemorrhage may result from a small, but deeply penetrating ulcer eroding the pancreaticoduodenal artery. While there are other causes of massive hemorrhage with hematemesis, nevertheless the fact that posterior wall duodenal ulcer is the most common cause is of some diagnostic significance. Stewart³ states that, if by physical examination, history and blood studies one can exclude portal hypertension and primary blood disease, the chances are nine to one that the bleeding is due to gastric or duodenal ulceration.

Aside from a careful history and physical examination the most important factor in the diagnosis of duodenal ulcer is X-ray examination by a competent roentgenologist. This will demonstrate the vast majority of lesions. The presence of a niche or crater, deformity of the duodenal bulb, hypermotility and irritability as demon-

strated by hyperperistalsis and rapid emptying of the bulb are the characteristic findings. When obstruction is present there is narrowing of the bulb and delayed emptying of the stomach.

While the diagnosis of a penetrating ulcer can usually be made from the history and X-ray examination there may be instances in which difficulties may be presented in differentiating cholecystitis with stones, gastric carcinoma, gastric ulcer, pancreatitis, esophageal hiatal hernia and coronary heart disease. Most frequently, perhaps, the severe penetrating type of pain due to posterior perforation will be mistaken for the pain of gallstone colic. The fact that pericholecystic inflammation and adhesions may make the cholecystogram inconclusive may add to the confusion. Careful questioning as to the time and regularity of the occurrence of the pain will be helpful in that pain occurring regularly between the hours of 11 P.M. and 2 A.M. is likely to be due to ulcer. One must keep in mind that it is not unusual for patients to have both gallstones and duodenal ulcer, and that they may have coincident complications of both diseases. Within the past year I operated upon a woman, age 56, with a preoperative diagnosis of acute cholecystitis with stones. She had an acute cholecystitis due to a stone impacted in the ampulla, and also a severe posterior wall duodenal ulcer which had perforated onto the common duct.

Carcinoma of the stomach ordinarily will not produce much difficulty as a differential diagnostic problem unless there has been hematemesis. Even then a correct diagnosis should be possible with a careful X-ray examination of the stomach and gastric analysis. However, early in the disease it may not be possible to come to a definite conclusion without a period of observation, and repeated X-ray studies. Mr. L. B., age 51, presented himself with a history of vomiting blood ten days previously. There were no other symptoms, and he denied previous trouble with his stomach. Duodenal ulcer was reported on X-ray. Hospitalization was advised but refused. He did not respond to treatment as expected of an ulcer and surgery was advised. He delayed this for another four months at which time a carcinoma of the stomach was found and resected. The duodenum was normal.

Careful X-ray examination coupled with a history of dysphagia and pain localized to the mid-epigastrium will usually diagnose an esophageal hiatal hernia. The electrocardiogram and clinical observation of the patient should make it possible to differentiate coronary heart disease. There should be little trouble differentiating acute hemorrhagic pancreatitis since there is usually more or less shock and upper abdominal rigidity, but acute or subacute pancreatitis associated with biliary tract disease may be confusing. It should be possible to exclude them by an accurate history, the presence of, or a history of jaundice

and X-ray studies of the gallbladder. The serum amylase test may not be helpful since the pancreatitis due to posterior perforation may produce elevated levels.

The treatment of uncomplicated duodenal ulcer is a medical problem, and there is general agreement that the treatment of the complicated ulcer is a surgical problem. The acute perforation is a surgical emergency, in spite of some recent reports of successful treatment by nonsurgical methods.⁴ Simple closure of the perforation is usually done, but excision of the ulcer or gastric resection may be done under favorable circumstances. Resection may be necessary if there is perforation of an ulcer on the posterior superior border of the duodenum in which closure would be difficult. Obstruction due to cicatricial contracture, and the inflammatory obstruction, if unrelieved, will require surgery. These two complications, perforation and obstruction, are definite indications for surgery and will be readily evaluated in the individual patient.

There is much controversy over the treatment of hemorrhage and hard and fast rules cannot be made to apply to each case. Each patient must be an individual problem. Most of the patients, even those with massive bleeding will recover on medical management. The advances in surgical treatment and the use of massive transfusion have made it possible to salvage by emergency surgery some of those who will not respond to medical treatment. One cannot have fixed indications for the decision to operate on the patient with a bleeding ulcer, but certain general factors can be recognized that will aid in evaluating each patient. First, bleeding is apt to be more severe in the patient past middle age. Second, hematemesis indicates a more severe type of bleeding than does melena. Third, bleeding that persists for more than 24 hours or that recurs with or without transfusion is of serious import. Fourth, bleeding that occurs while the patient is under medical management is apt to be more serious than that occurring in an ulcer without treatment. Fifth, the presence of complicating diseases such as heart disease, hypertension, pulmonary or renal disease will be factors to be considered in evaluating the prognosis and treatment. Generally speaking, surgery should be advised in patients with massive hemorrhage that persists or recurs in spite of adequate blood transfusion. Surgery should also be urged for patients who have had recurrent bleeding.

There are several factors to be considered in advising treatment for the patient with a subacute or chronic perforation. The individual's tolerance to pain, his willingness or unwillingness and his ability or inability either for personal or economic reasons to adhere to a medical regime, and the presence or absence of other complications, either of the disease or of other organs all must be taken into consideration. Some patients will be able

to obtain complete relief and stay comfortable for a considerable period of time on medical treatment. Other patients will not be able to obtain relief on a regime that will allow them to carry on their usual activities and support their families. It is needless to say that medical treatment should be given a thorough trial and surgery reserved for those who find it impossible to get permanent relief. Moore⁵ and his co-workers have recently reported extensive statistical studies on patients with duodenal ulcer treated at the Massachusetts General Hospital. They conclude that patients who have had a past perforation with recurrent ulcer symptoms, who have had an acute hemorrhage, who have progressive pain under a physician's care at home, or the onset of symptoms at the extremes of life in a male patient have what they term a "progressive and virulent disease," and the prognosis for a satisfactory result from medical treatment is poor. Definitive surgery in these cases gave twice the number of satisfactory symptomatic and economic results as did medical management.

Once the decision to operate has been made in a penetrating duodenal ulcer, what procedure should be used? A voluminous literature has accumulated concerning gastric physiology in the normal individual and those with duodenal ulcer, the alterations in physiology that occur after the various types of operations used in the treatment of ulcer, and the effects of these changes in modifying the disease. In spite of an enormous amount of research there is not agreement on many phases of the altered physiology and the effects of such alterations on the healing and recurrence of ulcer. It is not surprising therefore that there are differences of opinion as to the best procedure to be used in the surgical treatment of ulcer.

There is overwhelming evidence to support the belief that at the present time subtotal gastrectomy is the operation of choice.^{1, 5, 6, 7, 8, 9} If adequate resection is done one can expect excellent results in a high per cent of cases. One must recognize, however, that jejunal ulcer may occur after resection and published reports indicate that its incidence may vary from one to seven per cent of cases.⁶ While the individual surgeon may prefer this or that method of restoring gastro intestinal continuity, the essentials of an adequate resection will include removal of at least three-fourths of the stomach, including all of the pyloric mucosa and the use of a fairly short afferent jejunal loop. Some surgeons do not think that the beneficial effects of resection can be explained on the basis of the alteration in acid secretion alone, since achlorhydria is produced in only about 60 per cent of cases,^{1, 6} and believe that the relief of secondary pancreatitis incident to removal of the ulcer is an important factor in the result.¹ Others feel that it is unnecessary to remove the ulcer except in the cases

with massive bleeding. Certainly, the dissection of an adherent inflammatory ulcer from the pancreas can be difficult, and may result in injury to the pancreas, pancreatic ducts or the common bile duct. A procedure that can be used in such cases is to divide the stomach above the pylorus, and remove the mucosa down to the duodenum. We have used this procedure in a number of instances with satisfactory results. In doing this one must be careful that traction on the pylorus does not loosen the ulcer crater from its bed on the pancreas with resulting leakage and fistula. As stated above, the method of re-establishing gastro intestinal continuity is not particularly important. Our preference is for the anterior Hoffmeister procedure with the afferent loop placed to the greater curvature of the stomach. In the past three years we have used it in 75 cases, and it has seemed to us that we have had much less trouble with postoperative retention, and fewer instances of the dumping syndrome than with the posterior Polya method.

Gastroenterostomy has been discarded in most clinics as an operation to be used in the treatment of an active ulcer. It is an excellent operation for the treatment of the burned out cicatricial ulcer with obstruction. I believe that it is also a satisfactory operation in the elderly patient with an active ulcer who has obstruction, low gastric acids, and who has not had bleeding.

Vagotomy, combined with a drainage operation, preferably gastroenterostomy, has had an enthusiastic trial in the past few years. From a physiologic standpoint there is much to recommend it. Most of the early reports indicated favorable results and recent reports of Dragstedt¹⁰ and Crile¹¹ state that in their clinics it is the operation of choice and gives satisfactory results in the vast majority of patients. However, many observers have reported unfavorable results with failure of the ulcer to heal, return of acid secretion after a period of time and the occurrence of undesirable side effects.^{5, 9, 12} Our experience with the operation has been limited; it has been used in only 12 cases. These have been patients who had large inflammatory masses surrounding the duodenum in which it was felt that a direct attack on the lesion would be hazardous. All of the patients had complete relief of pain and have remained well. Dragstedt and Crile have stressed the fact that the indications for the use of vagotomy should be the same as for gastric resection. Others feel that it should be reserved for the treatment of patients who have recurrent ulcers following gastric resection.^{9, 12} It seems fair to say that the place of vagotomy in the treatment of duodenal ulcer will be determined only by further progress reports by those who have had considerable experience with it.

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ORTHOPTICS*

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THE value of orthoptics in the treatment of convergent strabismus is a subject about which there has been considerable discussion and uncertainty. Much of the confusion has been brought about by the improper use of this type of therapy. Orthoptics should not be thought of as a series of exercises designed to straighten crossed eyes, but rather as a means of diagnosing, prognosing and determining the method of treatment that should be followed in each individual case of squint. When we no longer attempt to alter anomalies of position by the exercise of isolated muscles, there will be much less criticism of and much less disappointment in orthoptics. It is in the diagnosing and eradication of certain obstacles that hinder or completely obstruct the development of normal binocular vision that orthoptics is of crucial value.

If we may consider all nonsurgical procedures in the treatment of squint to be a part of orthoptics, the objectives may be listed as follows:

1. The diagnosis, prevention and cure of suppression and amblyopia.
2. The diagnosis, prevention and cure of anomalous retinal correspondence.
3. The teaching of binocular visual habits by the development of fusion in all grades.

SUPPRESSION AND AMBLYOPIA

The bad habits or anomalies of binocular vision exhibited in practically all cases of convergent strabismus are originally initiated as a means of obviating double vision. The diplopia resulting

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from anomalies of position in squint may be produced in two different ways. In the maculo-macular type, the fovea of one eye is stimulated by an object that is different from the one stimulating the other fovea, and the two unlike images are projected to the same area in space. In the maculo peri-macular type, which is much more common, the macula of one eye and a noncorresponding element in the other eye are both stimulated by the same object, but the resulting images are projected in different spatial directions. This disturbing situation of confusion or diplopia cannot long be tolerated and either suppression or anomalous correspondence develops.

Suppression is a binocular anomaly and in the beginning is only temporary. It is a conditioned reflex, the conditioning stimulus being in the use of the other eye. If, however, this anomaly is neglected, the one eye develops much better vision and is used in preference to the other, so that this inhibition, which at first was conditioned, gradually becomes fixed. No longer now dependent upon the conditioning stimulus of the other eye, true amblyopia ensues.

It may be difficult or impossible, in many cases to determine the visual acuity because the child is too young or does not cooperate. One can usually judge fairly well by covering the fixing eye and observing the child's actions when he attempts to fix small objects. In the majority of cases, however, the E chart is satisfactory if the youngster is given a little training at home. If there is any doubt concerning the quality of vision, occlusion should be instituted and another attempt made at a later date to check the acuity. The presence of a true pathological amblyopia should always be eliminated and when any child objects too strenuously to patching, it may be well to take another look at the fundii.

It is always difficult to give a prognosis concerning the amount of vision that may be developed or recovered unless the history is reliable, which it usually is not. The acuity that we may eventually be able to obtain depends upon the age at which the squint began and the length of time elapsed before treatment was started. In general, the later in life this inhibition became operative and the shorter the period it remained active, the better the prognosis. In those cases that go untreated until past the age of six to eight years only the acuity that was present when the squint began can be reclaimed.

Duke Elder¹ says the prevention of amblyopia is the most important and urgent necessity in the treatment of squint in childhood. It should begin at the earliest possible stage, even though the child is considered too young for further treatment.

Knowing that the amblyopia is the result of a conditioned reflex, our treatment then is the elimination of the conditioning stimulus. By occluding the fixing eye we not only eliminate the

need for suppression we also produce a definite demand for the recognition of objects by the fovea of the squinting eye.

Occlusion should be complete and constant in all cases where it is possible. If time is taken to explain the necessity of this procedure and how essential it is to the recovery of vision, the parents will be much more cooperative. The most satisfactory type of occluder is one that is applied directly to the face since it eliminates any tendency to peek, and it is much more difficult to remove than one just hooked over the spectacle frame. Flesh colored Elastoplast makes a fine patch and does not irritate the skin as does regular adhesive tape.

In younger children where there is a possibility of transferring the amblyopia to the other eye, vision should be checked at regular intervals and if necessary the occluder placed over the other eye. If and when we have been able to develop good vision in the squinting eye, it must be maintained until binocular vision is developed or true alternation supervenes.

Since stimulation of the dormant macula is the rationale of treatment in amblyopia, the exertion of an active effort should be effacious. The various types of games and exercises that may be utilized are unlimited. The child can be taught to color, cut out large pictures, to string beads and sew them into patterns on cloth, weaving, knitting, peg boards and puzzles which will produce the desired stimulation. Several different types of instruments are also used for training, most of them utilize bright colored targets and flashing lights to incite the inactive macula.

ANOMALOUS RETINAL CORRESPONDENCE

Under normal binocular conditions the various retinal elements of the two eyes are arranged in pairs and are designated as corresponding retinal elements because they have common subjective visual directions. When an object is fixed with both eyes, corresponding retinal areas are stimulated, the images are projected in the same visual direction and are fused.

The normal correspondence according to Burian² is the most fundamental fact in binocular vision, it is innate and based on anatomic and physiologic organization of the organ of vision. It does though become more refined and fixed by constant use. In young children, however, it is not so secure that it cannot be altered if the need arises.

When a convergent squint develops it is obvious that the whole projection mechanism is changed. Instead of having corresponding retinal elements being stimulated by fixation on one object we have disparate retinal areas being stimulated, and as was said a short while ago, diplopia develops unless suppression or anomalous correspondence supervenes. The need now for the alteration just mentioned has arisen and a new type of sensorial relationship is begun wherein

the fovea of the fixing eye has a common visual direction with an eccentric area in the other eye. This newly formed relationship now eliminates any possibility of diplopia and gives the organism a semblance of binocular vision.

This process of an abnormal replacing a normal correspondence must require some length of time. The more constant the squint, the more fixed the angle, the quicker this alteration will be made. Likewise, the longer this new relationship is allowed to exist the more deeply ingrained it becomes. It is readily understandable then why in some cases this new correspondence is quite unstable while in others it is profound, also why our various diagnostic procedures will show such a variance.

There are several different methods of diagnosing anomalous correspondence: (1) The after image test; (2) The diplopia test and (3) The use of the major amblyoscope. The latter is probably the most applicable in children and consequently is used more widely. Briefly, the procedure is this: Dissimilar targets, for example, the parrot and the cage are placed in the slotted tubes of the instrument and these tubes are so placed that when the child is using both eyes there is no longer any motion of fixation as the lights are flashed off and on alternately. This measurement as read on the calibrated dial is the objective angle. Now the tubes are so placed that the targets are superimposed and this measurement is the subjective angle. If these two are the same the correspondence is normal; if there is a difference of over five degrees the correspondence is abnormal and the difference in the two readings is the angle of anomaly. When the angle of anomaly is smaller than the objective angle, the correspondence is termed unharmonious. When the angle of anomaly and the subjective angle are the same the correspondence is harmonious. This latter type is much more fixed and offers a decidedly poorer prognosis.

Anomalous correspondence is another conditioned reflex and has developed because of a conditioning stimulus which, in this instance, is the imaging of objects with the other macula. To eradicate this anomaly then the treatment is obviously total occlusion of the fixing eye. It is even more important here than in amblyopia that the occlusion be constant for this is a difficult habit to obliterate.

An active method of treatment that is used successfully by many orthoptists is the so-called macular massage. In this particular exercise both foveas are stimulated simultaneously in an effort to provoke consciousness of two macular images. It is best carried out by using the major amblyoscope. The tubes with two first degree fusion slides in place are locked at the objective angle of squint and then the images are moved rapidly back and forth across the foveas. Many of these cases will respond almost immediately, others may

require repeated exercises. In those who do not benefit from this form of therapy the prognosis is poor and surgery should be done. As soon as possible following the operative procedure massage should again be tried.

Burian,² speaking of surgery in the treatment of abnormal correspondence says, "the correction by this treatment is not as often achieved as might be expected. The ophthalmologist needs the assistance of the orthoptist who will help prepare the ground by pre-operative training and establish the gains achieved from surgery by postoperative treatment. Nowhere are proper timing and cooperation between doctor and orthoptist more important than here."

BINOCULAR VISION

To have normal binocular vision three definite requirements must be met:

1. The coordination of all extra ocular and some intra ocular muscles in such a manner that images are brought to focus on the maculae.
2. The fusion of these two images clearly and distinctly into one.
3. The projection of this image into its proper spatial location.

To obtain normal binocular vision, fusion with amplitude and stereopsis is the goal to be strived for in the treatment of squint.

Two entirely different types of reflexes are present in the production of binocular vision. Unconditioned reflexes, which are present at birth, are referred to as instincts. These are innate and structural in character and while not dependent upon development, they become more ingrained from experience. Conditioned reflexes on the other hand are not innate, they are acquired from necessity and matured by use, these require cerebral activity.

In a normal child the development of binocular vision begins at birth and proceeds unmolested reaching a state of maturity at about five years of age. Those reflexes, which in the beginning were more or less conditioned, have then become fixed and no longer require cerebral efforts.

When born all children are amblyopic and although the fixation reflex is present it is feeble. By the age of five or six weeks fixation has developed to the extent that both eyes will follow a light; convergence is well established at six months. Corrective fusion reflexes are present at the end of the first year and deviation can be produced with a prism. Development continues by trial and error until about five years of age when binocular vision becomes quite stable.

As was previously said, the development of binocular vision progresses if unmolested in the same manner as learning to walk or talk. When this natural process of development has been impeded by a squint, further progress ceases.

To develop normal binocular vision in a child who has a convergent strabismus he must first

be taught to see an image with each eye simultaneously and to coordinate his eyes in such a way that these images will fall on the foveas and the eyes remain straight.

The simplest method of stimulating the fovea of each eye simultaneously is by the use of the major amblyoscope. When the objective angle is known the tubes can be so placed that the illuminated targets will be imaged by both maculae at the same time. For example, if we have a child with an objective angle of 25 degrees of convergent strabismus we can use targets such as the parrot and the cage. The parrot being of a brighter color and of more interest is placed before the turning eye while the more drab or less interesting cage is placed before the fixing eye. The light stimulus also may be increased before the poorer eye. If now it is possible for the child to see both targets at the same time we may ask him to place the bird in the cage. When he has accomplished this, the operator may move the cage and have the child move the bird, constantly keeping him in the cage. Attempts should now be made to vary the angle of the tubes slightly and still have the parrot appear to be in the cage. When we have accomplished this we have produced simultaneous macular perception or first degree fusion. This is the simplest form but is a prerequisite for second and third degrees. After the child is able to do the targets in the series of which there are several he is ready to try the more difficult ones.

The second degree fusion targets require superimposition or the true fusion of two similar images. These targets are all made with a control mark of some type so that the operator may determine whether the child is fusing or suppressing. For example, each target may have a house on it, one with a window on one side and the other with a window on the other side. If the house is seen with the two windows the eyes are fusing, if the house has only one window one eye is suppressing. Considerable time should be spent with this series of slides attempting to gain amplitude if possible for this makes third degree fusion or stereopsis much more likely.

Most observers feel that stereopsis cannot be taught but once a child does have stereopsis however, it can be developed so that discrimination of depth differences will be much more acute.

There are many other instruments used in the development of binocular vision such as the various types of stereoscopes, the cheiroscope, etc. All, however, are based on the principle of the major amblyoscope. The only other one that I personally make use of is a hand stereoscope with targets graded to fit the various angles of strabismus.

SUMMARY

Some facts and some theories have been presented as to the origin and development of

amblyopia, suppression and anomalous retinal correspondence. The orthoptic methods of diagnosis and treatment have been discussed briefly and an attempt has been made to outline the development of binocular vision and fusion.

I would like to close with a quotation from an article by Dr. Lancaster:³ "With the major amblyoscope the orthoptic technician has the situation firmly under control. There are no extraneous stimuli entering the situation. The technician can control the lights and movement of the instrument and can control the stimulus by the choice of targets, so that the patient is almost forced to make a correct response. Once he makes the response he is praised for it and encouraged to repeat it. Thus the patient learns. This is orthoptics."

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DISCUSSION

Lawrence A. Taylor, M.D., Ottumwa: I think Dr. Gardner is to be congratulated upon his fine presentation of a difficult subject. He has given you a brief but concise resume of what orthoptics is, what we strive to accomplish by orthoptics, and outlined, in a general way, how one goes about obtaining those objectives by orthoptic training. As I read and re-read Dr. Gardner's paper, I was amazed to see how much he has told us in the few minutes that he talked. His paper will, in time, be published but I hope that he will have reprints made available to those of you who, to date, have been forced to neglect the most important part in the care of the cross-eyed child, namely orthoptics.

For those of you who have taken an active interest in orthoptics Dr. Gardner could, in the time allotted, do no more than give you a fine review of the fundamentals. For those who have not used orthoptics I can well imagine that Dr. Gardner at times might as well have talked in a foreign tongue. It is with this thought in mind that I wish to make a plea for more adequate care of cross-eyed children.

As all of us know, amblyopia ex anopsia, the blindness of disuse, is the end result in the squinting eye. No one in this room could tolerate the thought of allowing an eye to go blind from simple glaucoma without doing everything in his power to prevent it. But nearly all of us have blithely allowed dozens and perhaps hundreds of crossed eyes to do just that—and consoled ourselves with the thought that we could do nothing about it. In the past that was true. Today it need not be true. Today there are a few offices and the University Hospital, where training can be done. The number is far too few but I am sure the Eye Department at the University Hospital would do all in its power to help train more young women to become orthoptic technicians. If we would push it, the time would soon come when an orthoptic technician would be located in each large community, available to all the ophthalmologists in that community.

In discussing Dr. Gardner's paper I shall limit

my discussion to abnormal retinal correspondence. As you know, abnormal retinal correspondence is a perverted form of binocular vision in which the brain cortex receives and fuses sensations of a common image which have been sent to it by disparate retinal elements, the macula of the fixing eye and some nasal spot in the squinting eye.

Abnormal retinal correspondence may or may not be present in squint. It is not likely to develop in the child who began to squint at or shortly after birth. The reason for this is that the child had not yet developed any desire for fusion and if the need for fusion had not been established the so-called false macula was not needed.

It is not likely to develop in the child who first squints at school age because his sense of peripheral projection is too well established. Nor is it apt to develop in the case where the degree of squint is quite variable. It is most apt to develop in the child who first squints at the age of two to three and who keeps a fairly fixed degree of squint for a long period of time.

It is extremely important to determine the presence or absence of abnormal retinal correspondence. No one test for it should be relied upon. The major amblyoscope is probably the most accurate because with it you most nearly simulate room conditions and measure the disparity between the objective and the subjective angle of squint. But one should also do the prism diplopia test using either a light, a dot, or Lancaster's red-green. The after-image test should be done.

A correlation of all three tests is important in arriving at the prognosis. If abnormal retinal correspondence is present by all three tests one is quite likely to find that it is a firmly fixed habit which will be exceedingly difficult to break up.

Time is too limited to more than mention treatment. Most important is prolonged total constant occlusion; total meaning no peek; constant meaning from morning waking to lights out. Training on the major amblyoscope is essential. Each orthoptist has her own pet technic, pet targets, etc., but they all have one common objective, re-awakening of the true macula and elimination of the so-called false macula.

Surgery could well be classed as an orthoptic procedure because it helps break up abnormal retinal correspondence by changing the position of the eyeball and thereby the area of retina used.

For after all, what is orthoptics? It is taken from the Greek; ortho, straight: opsis, sight. Straight sight. That is for what we are all striving.

SPEAKER'S BUREAU RADIO SCHEDULE

WOI—Thursdays at 11:15 a.m.

GOLD MEDAL DOCTORS

December 1.....Elliot P. Joslin
December 13.....George Dock
December 20.....George R. Minot
December 27.....Anton J. Carlson

WSUI—Tuesdays at 11:45 a.m.

THE DRUGS YOU USE

December 4.....Cosmetics
December 11.....Asthma and Hayfever
December 18.....Heart, Kidney and
Blood Pressure Ailments
December 25.....Hormones and Fat Reducers

State University of Iowa
College of Medicine

CLINICAL PATHOLOGIC CONFERENCE
October 17, 1951

SUMMARY OF CLINICAL RECORD

THIS patient was first admitted to the Urology Department on December 23, 1940, at the age of 15, with the chief complaint of injury to the left kidney region and passing of blood in the urine. About seven hours before admission the patient turned over while coasting on a hill on a sled. He did not recall any specific injury to his back or side, but had a severe sharp pain in the left flank. He got up and walked home. About one hour after the accident he passed 30 cc. of blood in his urine and 15 minutes later he had to void again. This time there was about 150 cc. of bloody urine. He was seen immediately by a family physician who referred him to this hospital.

His past history was that he was previously seen in this hospital at the age of two years with acute maxillary sinusitis and acute right mastoiditis, malnutrition, secondary anemia. At that time he had a right mastoidectomy and a myringotomy. He was readmitted to this hospital again at the age of two years for tonsillitis. At the age of five he had a spastic paralysis of the lower extremities and had a bilateral adductor tenotomy. Past history revealed that his mother had died of kidney disease and recently a sister had expired of kidney disease.

Physical examination revealed a well-developed, well-nourished white male in a moderate amount of pain. Head and neck were normal, lungs were clear to percussion and auscultation, the heart was not enlarged and was normal in rate and rhythm with no murmurs. Blood pressure was 136/84. There was much rigidity in the left upper quadrant and flank with tenderness on palpation. No masses were palpable. Rectal examination was negative. Extremities were all spastic with atrophy of the lower extremities.

The urine was grossly bloody with a white blood count of 16,500 per cu. mm., blood urea nitrogen and creatinine were normal. Intravenous pyelograms revealed good excretion of dye bilaterally. On the left side there was extravasation of dye into the kidney substance. There was also a filling defect in the pelvis of the left kidney as well as elongation and compression of the calices of both kidneys. The patient was treated conservatively and the hematuria disappeared in 12 days. Intravenous pyelograms were repeated and revealed no evidence of extravasation. However, there was still distortion of the calices bilaterally. The patient was discharged after 17 days in the hospital with instructions to return for further study.

He was readmitted on March 13, 1941, with no urinary complaints either at the time of admission

or during the interval. Physical examination was essentially the same. The blood pressure was 140/95 and the left kidney was palpable but smooth and non-tender. Blood urea nitrogen and creatinine were again within normal limits. Bilateral retrograde pyelograms were performed and revealed both kidney pelves and calices to be greatly dilated with elongation of the major calices. A filling defect previously seen in the left renal pelvis had disappeared. The patient was discharged after 12 days in the hospital with instructions to return for further follow-up care and study.

He returned on February 24, 1945, stating that he was well until four weeks prior to admission when he experienced some right upper quadrant pain and passed blood in the urine. The blood disappeared after four days and the pain also disappeared, but recurred in one week and was present until the time of admission. About six hours before admission he began to have both hematuria and clots. Physical examination again was essentially the same except for the blood pressure which was 180/125. On this admission both kidneys were palpable with tenderness on the right. The urine was grossly bloody and the blood urea nitrogen was 20 mg. per 100 ml., creatinine 1.6 mg. per 100 ml. Intravenous pyelograms revealed excretion bilaterally with incomplete filling. The ureter on the right was pushed toward the midline. The patient was again treated conservatively, the bleeding subsided and at the time of discharge he was free of pain and hematuria.

His next admission to the hospital was on November 11, 1946, when he returned at the suggestion of the family physician for a general checkup. He was having generalized back pain which was intermittent, but not severe. On this admission the blood pressure was 210/150, and there were huge irregular masses present on each side of the abdomen. The mass on the left was the largest and extended to the pelvic brim. Both were movable and non-tender. The urine revealed a 3+ albumin and many red blood cells. The blood urea nitrogen was 25 mg. per 100 ml. and creatinine 1.4 mg. per 100 ml. Intravenous pyelograms revealed poor visualization of the renal pelves and calices, but they appeared to be distorted. Retrograde pyelograms were performed and revealed large soft tissue masses in both renal areas. After the dye was injected there was an enlargement and distortion of both renal pelves and calices. He was treated conservatively and discharged on November 21, 1946.

He was next seen in the Out Patient Department on June 6, 1949, complaining of bouts of dysuria, hematuria, increasing severe occipital and right temporal headaches, blurring of vision and episodes which were similar to cerebral vascular accidents. The blood pressure was 240/140 and both kidneys were markedly enlarged and non-tender. The specific gravity of his urine was 1.001

and revealed 1+ albumin. Intravenous pyelograms showed no excretion of dye bilaterally. The blood urea nitrogen was 42 mg. per 100 ml., creatinine, 4.2 mg. per 100 ml. The patient was treated symptomatically and discharged.

His final admission was on December 12, 1950. He had noted a progressive loss of vision in the left eye. Two months prior to admission he developed stomach cramps, nausea and vomiting and passed blood in his urine. Since that time he had developed left flank pain. Physical examination revealed a chronically ill white male. There was exudate in the left fundus. The lungs were clear to percussion and auscultation, the blood pressure was 199/142 and the heart enlarged to the left. Again the huge bilateral masses were felt in the abdomen. Urinalysis revealed a specific gravity of 1.007 and a 2+ albumin. Hemoglobin was 7 mg. per 100 ml., red blood count 2,700,000 per cu. mm. and white blood count 5,900 per cu. mm. Blood urea nitrogen was 140 mg. per 100 ml. and creatinine 10.6 mg. per 100 ml. CO₂ combining power was 22 and the blood chlorides 670 mg. per 100 ml. He was treated symptomatically, but became progressively worse. On December 18, 1950, the blood urea nitrogen was 131, creatinine, 11.2, CO₂ combining power 29, blood chloride 630. These studies were again repeated on December 21, 1950. The blood urea nitrogen was 266, creatinine 16.9, CO₂ combining power 15, blood chlorides 456.

The patient became very weak, could not speak or swallow, and expired on December 30, 1950.

Abstracted by David A. Culp, M.D.

NECROPSY FINDINGS

The most significant finding at autopsy was advanced polycystic disease of the kidneys. These organs were excessively enlarged, the combined weight being 6790 grams. There was considerable distortion of the relationship of the abdominal viscera. The kidneys were riddled with cysts which varied from microscopic size to 4 cm. in diameter. Only small islands of recognizable kidney tissue remained, and these were the seat of scarring, chronic inflammation and degeneration. The pelves were moderately dilated, but no stones were found in the genito-urinary tract.

Uremia was the apparent cause of death. The post-mortem blood urea nitrogen was 332 mg. per cent and the creatinine 23.6 mg. per cent. There was no pericarditis, but fibrinous pleuritis with pulmonary congestion and edema and subacute bronchitis was observed. There was mild congestion and edema of the brain. Other findings included a rather severe generalized reticulo-endothelial hyperplasia of lymph nodes, depression of erythroid and hypermaturation of myeloid elements of bone marrow and moderate chronic cystitis.

CLINICAL DISCUSSION

Dr. John A. Hutch, Urology: This case is an in-

teresting one indeed because it depicts so vividly the progression of the disease with the passage of time. It began in 1940, and terminated in the death of the patient ten years later.

In 1940, the patient, a boy 15 years old, was sliding down a hill when his sled overturned. He noticed a severe sharp pain in the left flank, but was able to walk home. One hour after the accident he passed blood in his urine and was referred to this hospital. Past history revealed that his mother and sister had died of kidney disease.

Physical examination revealed tenderness and rigidity in the upper left quadrant and left flank. His blood pressure was 136/84. He had grossly bloody urine with a normal blood urea nitrogen and creatinine. The intravenous pyelogram showed good function bilaterally and extravasation of dye into the substance of the left kidney. The patient must have sustained a rupture of his left kidney when his sled overturned.

Since a high percentage of ruptures occur in diseased kidneys, one wonders if this boy could have renal disease in addition to renal injury. The pyelographic report is helpful. It says there was a filling defect in the pelvis of the left kidney and elongation and compression of the calices of both kidneys. We must be dealing with bilateral renal disease in a 15 year old boy who has a definite family history of renal disease.

Polycystic kidneys must be strongly considered. Its congenital nature is well known and many urologists recommend that the entire family have pyelograms once this disease has been diagnosed in one member of the family. For all practical purposes this disease is always bilateral. Its pyelographic pattern is characteristic and the description of the pyelogram in this particular patient is compatible with the diagnosis. It is unusual, however, to discover polycystic kidney disease at the age of 15 years. Usually, if this congenital malformation is compatible with life, the patient will live at least into the twenties or thirties before the disease becomes evident clinically.

Bilateral congenital hydronephrosis is a second disease which must be considered. Here again the disease is of a congenital nature, and is often bilateral. The obstruction is at the ureteropelvic junction and usually due to aberrant vessels, fibrous bands or high insertion of the ureter into the pelvis. The pyelographic pattern described for this case, however, is entirely different than that seen in congenital hydronephrosis. In the latter case the pelvis and caliceal system is greatly dilated; whereas in this case the calices were elongated and compressed. Because of this marked pyelographic difference I believe this diagnosis cannot be applied to this case.

Of interest also in the past history is the spastic paralysis the patient suffered when he was five years old. It is not clear just what the exact nature of this condition was, but it is known that neurologic diseases, especially those involving the

spinal cord, will produce bilateral kidney disease in the nature of hydroureter and hydronephrosis. I do not believe that this is the case here, however, because such patients usually have neurogenic bladders and again because the pyelographic pattern described is not that of hydronephrosis.

Bilateral renal tumor should be mentioned because it will give the type of pyelograms described. Such cases have been reported, but they are rare. Dr. Flocks said he has seen two such cases. The age of the patient is also strongly against such a diagnosis. Between the ages of eight and 30 renal tumor of any type is extremely rare. I do not believe that this diagnosis can be considered seriously.

I believe that the diagnosis of polycystic disease was made at the time the first pyelograms were read. At least it must have been suspected. It was probably confirmed by the retrograde pyelograms made in March, 1941. His subsequent course certainly tends to confirm this diagnosis. Masses soon became palpable in each flank and their progressive increase in size was noted on each successive visit. By 1946, the mass in the left flank had extended to the brim of the pelvis. By 1950, they were described as huge. The failure of renal function is progressively observed. The blood urea nitrogen was 20 in 1945, 25 in 1946, 42 in 1949 and rose to 266 a week before death. Function by intravenous pyelogram became poor as early as 1946; and in 1949, there was no function from either kidney by intravenous pyelogram. The nausea and vomiting occurring prior to his last admission were probably uremic symptoms.

The progressive rise in blood pressure is likewise of interest. It is first recorded as 136/84 in 1940. With each visit it shows an increase and was recorded as 240/140 in 1949. In 1949, the first mention is made of hypertensive symptoms. These included "increasingly severe occipital and right temporal headaches, blurring of vision and episodes which were similar to cerebral vascular accidents." In 1950, the heart is recorded as enlarged to the left.

The hematuria which was present off and on throughout the ten years this patient was followed is also common in polycystic disease. The terminal episode involved the combination of uremia, anemia and acidosis, the usual picture of renal failure.

Dr. Rubin H. Flocks, Urology: Could we have the student opinion?

Junior Student: The student opinion in this case was unanimous for bilateral polycystic kidney disease. Bilateral hydronephrosis and bilateral tumors were also considered.

Dr. Flocks: Since the x-ray findings were so important, we will have Dr. Forbes present them.

Dr. Stephen A. Forbes, Radiology: The first intravenous pyelograms, obtained a few days after the injury, show a rather extensive filling defect involving the left renal pelvis and extending down

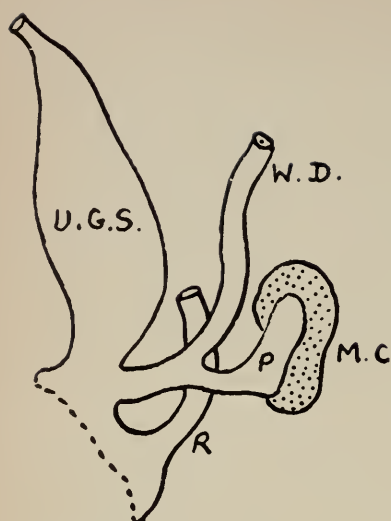


FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.

into the uretero-pelvic juncture. This is characteristic of the filling defect commonly seen in the presence of a blood clot, and its presence in this instance is consistent with the history of recent injury to the kidney. Both kidneys also show definite cupping of the minor calices, stretching out of the major calices, an increase in the superior-inferior diameter of each renal pelvis and symmetrical enlargement. Because of these changes

the interpretation of bilateral polycystic kidneys is also made. Films taken during retrograde pyelography three months later again show bilateral polycystic kidneys, with disappearance of the blood clot from the pelvis of the left kidney.

We were fortunate in having another examination in 1946, in which a noticeable increase in the size of the kidneys can be seen. The increased soft tissue density filling both flanks and obliterating

the normal psoas shadows is produced by the greatly enlarged kidneys. Three years later a film of the urinary tract without contrast medium again shows similar evidence of extreme enlargement of each kidney as demonstrated by the increased soft tissue density in each flank, now extending

moved in this patient. You will notice the variegated colors. Some of the cystic structures contained old hemorrhage, some contained cheesy-like material. Unfortunately we do not have hemisections of these, but I do have another case to show the cut surface. The cysts varied from a few

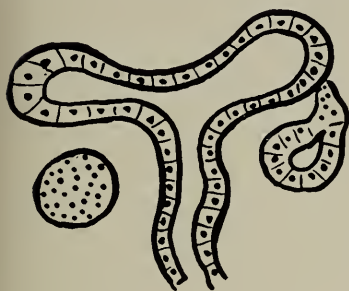


FIG. 5.

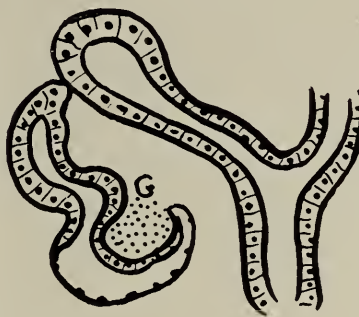


FIG. 6.

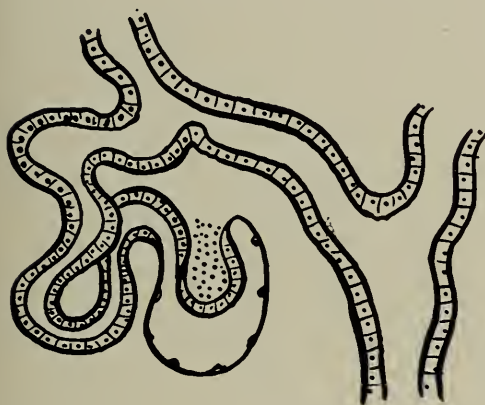


FIG. 7.

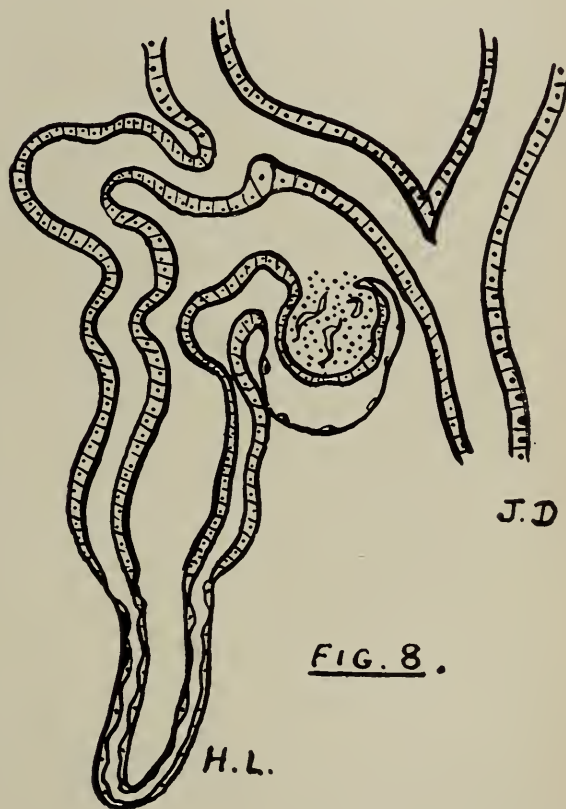


FIG. 8.

below the level of the iliac crests, although neither collecting system can be visualized following intravenous administration of opaque medium.

Dr. Flocks: Dr. Carter will now present the autopsy findings.

Dr. John R. Carter, Pathology: This is a case of congenital polycystic disease of the kidneys.

The kidneys were enormously enlarged. The combined weight was 6,790 gm. The combined weight of normal kidneys is between 300 and 400 gm. This structure here is a normal kidney for comparison. These are the masses that were re-

mm. to approximately four or five cm. in diameter.

This is another case of polycystic disease of the kidneys. These weighed 3,000 gm. This is a hemisection of the kidney showing the character of the cysts on cross section. It is barely possible to recognize the architectural pattern of the kidneys. It is worth mentioning that this type of change usually occurs in the adult form of congenital polycystic disease of the kidney while in the juvenile or infantile type of polycystic disease, the cysts are usually not this large. As a

matter of fact, they look more like a sponge and generally the cysts become no larger than one cm. in diameter.

The next three slides are microscopic photos of various portions of what remaining kidney tissue there was. It was necessary to hunt through the various sections we had to find anything that remotely resembled kidney structure at all. However, in this particular area you can see a glomerulus. This represents the wall of one of the larger cysts lined with columnar and cuboidal type epithelium. There is cellular debris and some red blood cells in these cysts and, as I mentioned before, some of them had cheesy-like material in them. You do not recognize any tubular structures at all. It is a mass of fibroblastic tissue. Frequently the fibroblastic tissue will proliferate rather markedly.

This is a higher power view of another cyst to show again the character of the epithelial lining. These little structures represent what few atrophic tubules there were left. They are non-functioning. Many of these cells you might take as inflammatory cells do represent atrophic cuboidal epithelial cells in these atrophic tubules. Here is a scarred out glomerulus. The few blood vessels that could be recognized and were not too badly distorted, did not show evidence of arteriosclerotic changes. There was some intimal thickening, but as may be brought out later, the hypertensive features in polycystic disease are generally attributed to the pressure and distortion of the vessels, rather than a narrowing per se due to arteriosclerotic changes.

This microscopic photograph was taken near the pelvic region. This is a portion of a cyst showing fragmentation. In this particular area, there are some dilated blood vessels, some proliferating fibroblastic tissue and rather pronounced edema with chronic inflammation of the interstitial tissue. Many times the cystic structures become infected so that an acute suppurative type of nephritis sometimes accompanies this disease. We did not find suppuration in this particular instance, although there was a chronic type of inflammatory reaction.

This is a section of lung. The lungs were heavy and barely floated. They were full of fluid and these pale areas represent precipitated protein material. This portion of the lung tissue shows edema fluid in the subpleural connective tissue. These are edematous alveolar spaces.

This is a photograph of the pancreas. Several times previously we have commented on the fact that the pancreas shows changes in cases of uremia; in fact, in the majority of cases of uremia. The changes I am about to describe are not pathognomonic of uremia. The changes consist principally of an inspissation of secretory material in the acinic structures with fragmentation and atrophy of cells. Just what the etiology, mechanism or pathogenesis of these changes is in the pancreas, we do not know.

The patient did die of uremia. At the time of autopsy, the blood urea nitrogen was 332 mg. per cent and the creatinine was 23.6 mg. per cent. There was moderate cardiac hypertrophy, but not as pronounced as you might expect from the length of time the patient had hypertension. As far as the brain was concerned, we found nothing of any great significance. There was mild congestion and edema which can be seen both grossly and microscopically. This individual did have spastic paralysis which might indicate that there was a pyramidal lesion. The brain was examined carefully with that idea in mind and also with the idea that there might be numerous cerebral vascular accidents in the form of either hemorrhages or infarcts or some type of damage associated with the hypertensive encephalopathy. We could find nothing, and histologically the sections appeared virtually normal except for the mild congestion and edema. There was a mild degree of fibrinous pleuritis. There was no fibrinous pericarditis. There was no evidence of pneumonia.

Dr. Bernard I. Lewis, Medicine: It is stated that in certain percentage of cases there is spina bifida or meningocele present. Was it looked for here?

Dr. John R. Carter: Yes, it was. No other congenital defects were found. There are frequently other associated congenital abnormalities, and spina bifida is certainly one of them. We always look for cystic disease of the liver. We have had some cases that have shown both cystic disease of the liver and of the kidneys. There are any number of congenital abnormalities that can occur in association with polycystic disease of the kidneys. Dr. Bell states that in his series of 46 cases in 1946, two per cent had cystic disease of the liver in association with cystic disease of the kidney. Other people report a much higher incidence than that. I do not know what our records reveal.

Dr. James W. Culbertson, Medicine: Is cystic disease of the lung ever associated with cystic disease of the kidney?

Dr. Carter: I have never seen any reference to that, but cystic disease of the pancreas can occur and has been commented upon by a number of people.

Dr. Robert T. Tidrick, Surgery: Congenital polycystic disease of the kidneys is occasionally associated with congenital polycystic disease of the liver and lungs. I saw a patient recently who had an enlarged liver and symptoms suggesting carcinoma of the stomach with metastases to the liver. A tentative diagnosis of this was made from the symptoms. However, further investigation revealed the stomach to be normal, the enlarged liver to be the seat of large cysts and both kidneys to be polycystic. This illustrates the misleading symptomatology which may occur in this disease.

Dr. Flocks: We do occasionally have associated changes in the vascular tree of the brain. Dr. Sahs would you like to comment on these?

Dr. Adolph L. Sahs, Neurology: The association of intracranial aneurysm and polycystic kidney disease has been documented in the literature occasionally. Dr. Meyers and I have been able to add four cases to the 22 reported to date. In a series of approximately 150 intracranial aneurysms in this hospital, there have been four instances of associated polycystic kidney disease. Of particular interest was the one case in which there were seven bifurcation aneurysms about the anterior portion of the circle of Willis.

In addition to the comments which have been made relative to the association of polycystic kidney disease and cystic disease of the liver, cystic disease of the pancreas and spina bifida, you might add to your list the occasional presence of a congenital aneurysm of the circle of Willis.

Dr. Flocks: There is a great deal of controversy or lack of understanding with regard to how this particular congenital condition develops. Dr. Davies of the Department of Anatomy has been interested in this and has done a great deal of work in it. He is going to tell us about it.

Dr. Jack Davies, Anatomy: I should like to say a few words about the possible causation of polycystic kidney as far as I understand it. It is badly understood, but I should like to put before you some details of the development of the kidney, and to point out to you some places in which the developmental process may go wrong.

Historically, Virchow was of the opinion that polycystic kidney was due to blocking of some of the tubules by salt crystals deposited there. He later changed his opinion and believed it was the result of a non-specific inflammatory process around those tubules. Ribbert considered it to be due to an inflammation of the renal papillae whereby the papillary ducts were blocked and urine dammed up beyond them. Other workers thought the condition might be the result of fetal syphilis and some have suggested it might be a true neoplasm. In fact, the name "cystadenoma-fibroma" has been coined to describe it.

It is inconceivable that the many types of cysts found in the kidney should arise from a single developmental cause. I shall merely concern myself with the congenital type of polycystic kidney such as we have had described today, and to try and point out how it may be produced experimentally, and how a study of human development may throw light on its causation.

In the 5 mm. human embryo, that is about the fourth week, the Wolffian or mesonephric ducts may be seen coming down to the urogenital sinus (Figure 1). A blunt diverticulum of the posterior wall of the duct represents the ureter or "ureteric bud." The latter grows cranially and dilates to form the primitive pelvis (P). The primary pelvis then sprouts two diverticula, one of which grows cranially and is termed the "cranial pole tubule" and the other grows caudally and is termed the "caudal pole tubule" (Figure 2). They are designated by a Figure 1 in the illustration since they

represent the first generation of collecting tubules. Shortly after two more first generation tubules are added to the primary pelvis and are termed the anterior and posterior central tubules respectively (Figure 2). Each of these four tubules of the first generation develops a second generation of diverticula which are the collecting tubules of the second order (2 in Figure 3). This method of sprouting of tubules of one generation to produce tubules of a later generation occurs in all cases, and is always more advanced in the two pole tubules than in the smaller central tubules. Each new generation of tubules, in number two to four, is given off at right angles to the parent tube. Tertiary, quaternary and higher generations are produced in this way and are designated as 3 and 4 in Figure 4. As many as 12 to 14 generations in all are produced in the adult kidney, giving a total number of nephrons of the order of a million.

The tubules of the first generation become the major calices; those of the second generation become the minor calices (9 to 12). If the developmental pattern goes on as we have described, we ought to find about three, or at the most four, main (papillary) ducts opening into each minor calyx. This is not so, however, and the number is found to be about thirty. What has happened? The suggested explanation is that the tubules of the third and fourth generations have been taken up or absorbed into the minor calices, so that the tubules of the fifth generation now open into those of the second. This gives the required number ($3 \times 3 \times 3 = 27$) of papillary ducts associated with each minor calyx.

So far we have not mentioned the secretory tubules of the kidney. We are indebted to Kupffer (1865) for our conception of the double origin of the kidney, that is, the collecting tubules from the ureter and the secreting tubules from the mesoderm. As the ureteric bud grows out from the Wolffian duct, it becomes surrounded by a mass of condensed mesoderm, the so-called "metanephric cap" (M.C. in Figure 1). With the continued division of the ureteric tree, the metanephric cap becomes condensed over each succeeding generation of tubules and becomes pushed aside as a new generation sprouts and grows peripherally. A portion of the metanephric tissue is cut off and is always found in the angle between an old and the new generation of tubules (Figure 5). The essential lobulated character of the fetal kidney can be seen in Figure 4 to be determined by the progressive subdivision of the metanephric cap. The clump of metanephric mesoderm in the angle between two tubules first develops a lumen and is known at this stage as a "metanephric vesicle" (right side in Figure 5). The vesicle then becomes S-shaped (Figure 6) and develops a glomerulus and capsule at its medial end (G in Figure 6). The outer end of the S-shaped tubule breaks through into the collecting tubule at this stage. The secretory

tubule then elongates, the intermediate portion of the tubule falls out from within the concavity of the glomerular capsule and develops into Henle's loop (H in Figures 7 and 8).

During the complex developmental process outlined above, several things may be imagined to go wrong. The following theories have been put forward: (1) there may be a failure of fusion of some or more of the secretory tubules with the collecting tubule. This is the classical theory of the causation of congenital polycystic kidney.



FIGURE 9. Polycystic kidneys with normal kidney (center) for comparison.

(2) Another theory, put forward by Kampmeier, emphasizes the absorption of the third and fourth generations of tubules into the minor calices as described above. It must be remembered that secretory tubules are developed in relation to all the collecting tubules after the second generation. When the tubules of the third and fourth generation are absorbed into the minor calices, the secretory tubules related to these tubules either fail to unite with them, or unite and later separate, establishing new connections with the tubules of the fifth and perhaps older generations. These secretory tubules remain vestigial, lying in the medulla of the kidney and close to the pelvis. They may become cystic since urine production goes on in the tubules, and by pressure on neighboring tubules may cause multiple cysts. Kampmeier counted as many as 40 cystic tubules of this type on each side in the kidneys of a five-month fetus. He believed that this was a normal condition in the developing kidney.

The experimental production of cystic kidneys sheds some light on their pathogenesis. Hepler and Hinman cauterized the apex of the single renal papilla of the rabbit kidney, thereby blocking some of the papillary ducts. To their surprise they did not produce a cystic kidney, but rather a contracted kidney similar to the contracted kidney of chronic arteriosclerosis. Simultaneous ligation of a branch of the renal artery did, however, produce a cystic condition in the infarcted area. There seems, therefore, to be an ischemic factor involved which may explain the time lag

in the development of symptoms in kidneys perhaps predisposed developmentally to the formation of cysts. Bagg has produced cystic kidneys of an inherited character in the third and fourth generation of offspring of irradiated mice. They were inherited as a Mendelian recessive.

My own opinion is that not much satisfaction can be expected from a study of mechanical factors in development. The failure, as I see it, may well be one of induction. Thus the Wolffian duct is known to induce the formation of mesonephric tubules, and the same may be true of the metanephros. The collecting tubules may induce the differentiation of the secretory tubules from the metanephric mesoderm, but we are ignorant of the nature of this induction. The combination of cystic kidneys with other gross developmental defects, such as club foot, fissures of the face, cystic liver and pancreas suggests that we are dealing with an overall hereditary defect about whose nature we are almost entirely ignorant.

Dr. Flocks: This is, I think, the best explanation of this type of development of the tubules that I have ever heard, and it shows again how much more needs to be learned about this problem. This is one of the best discussions I have ever heard on this particular problem.

I would like to make a few remarks in summary. First, from the point of view of history, the story as outlined in the protocol is definitely characteristic of congenital polycystic disease. Because these kidneys were so enlarged, they were more easily injured and thus may attract attention to the disease. The familial history, the gradual insidious development of hypertension and evidences of renal insufficiency are all characteristic of polycystic disease.

With regard to treatment, as you notice from the protocol, there was no specific treatment given to this particular patient. He was treated symptomatically and he went on to development of his eventual outcome.

There have been a certain small number of men in the field who have felt that the course of the disease, i.e., the progression of the disease, could be retarded to some extent by the drainage of the cysts. They expose each kidney, deliver it up underneath the skin, puncture the cysts, as many as they can, possibly cut off some of the upper surfaces of some of them, and then leave the kidney in an almost subcutaneous position so that as time goes on and as new cysts grow, they can puncture them without exposing the kidney to another open operative procedure. In the past, it has been our opinion that this had little to offer these patients, and we have not carried out any of these procedures.

However, a former graduate of this medical school had congenital polycystic disease. We had an opportunity to follow this patient over many years. This patient gradually developed hypertension and some slight evidence of renal insuf-

(Continued on page 514)

FROM LEECHES TO ANTI-BIOTICS*

GEORGE F. LULL, M.D.**

CHICAGO, ILL.

The last one hundred years since this Society was founded have truly been revolutionary both in technology and in medicine. We have come from the horse and buggy to the jet plane and from pink pills to radioactive isotopes.

The subject of my talk tonight may appear to be what is termed by the writing profession as "corny." However, even as young a man as I am, I can remember selling leeches when I was employed in a drug store. We kept them in a wooden container with some kind of seaweed and had to fish them out on request. They were also prescribed at times by physicians.

Our organizations have changed a lot too. I thought it might be interesting to look back for a moment to the American Medical Association of 1851 and see what was going on when our fathers and grandfathers were practicing medicine. So I took down the big thick book containing the transactions of the American Medical Association for that year. It was only Volume Number Four, because, as you know, the American Medical Association was founded in 1847 just a few years before your own Society.

Leafing through the book I found that the Association held its annual meeting that year in Charleston, S. C. That in itself would be impossible today because our annual meetings have grown so large that only four cities in the country can handle them—New York, Chicago, Atlantic City and San Francisco.

I looked up your Iowa State Medical Society—then called the Iowa Medical and Chirurgical Society—and found that you had four delegates to the American Medical Association—none of whom showed up at the meeting! But after all, Iowa was a long way from Charleston in the horse and buggy days. These delegates were Dr. J. D. Elbert and Dr. J. M. Witherwax, who were to represent the Iowa Medical and Chirurgical Society and Drs. S. G. Armor and D. L. McGugin, who were to represent Iowa University. Dr. Armor was the only man of the group who was a member of the American Medical Association and he lived in Keokuk. The records of the American Medical Association show that, in addition to Dr. Armor, there were only two other physicians in Iowa who were members at that time of the American Medical Association: Dr. J. F. Sanford of Keokuk and Dr. A. B. Malcolm of Dubuque.

As might be expected, the new Association was still wrestling with organizational problems. The Philadelphia delegation presented this resolution: "Whereas the Constitution of the American Med-

ical Association, by providing for delegates from all permanently organized medical societies, medical colleges, hospitals, lunatic asylums, and other permanently organized medical institutions, unjustly favors the profession in cities where such institutions exist and diminishes the importance and thereby discourages the formation of county medical societies in rural districts, therefore, be it resolved that the American Medical Association Constitution be altered to admit only delegates from county or state medical societies."

At this same meeting there were resolutions in favor of admitting delegates from dental and pharmaceutical colleges as well. The whole question of representation was referred to a committee, and before very many years the American Medical Association did have delegates only from state societies and then from the specialty groups when they organized.

Yes, 1851 was different. Then everyone was trying to get into *one* organization. Today it seems to me that just about everybody is trying to start a new one!

The American Medical Association was worrying about medical education 100 years ago and we are still worrying about it today—only the particular problem has changed. Back in 1851 there were only a very few *good* medical schools but there were a great number of diploma mills and new ones were opening up all the time. The American Medical Association was just beginning its long and successful struggle to raise the standards of medical education in this country. Many resolutions deploring the quality of the schools were introduced, one of which called on the faculties of the schools to require attendance at two full courses before an M.D. degree would be conferred. A course in those days lasted only four to six months. The resolution was defeated on the basis that it was too strict a requirement.

Today there is very little wrong with the quality of our medical schools, but there is something very wrong with their finances. Most of the schools need additional funds in order to maintain their high standards and to expand. As usual, when money is needed somewhere, the socializers in the government are only too ready to dole some out. It is a temptation to succumb to this offer of money for the asking. But if we do, we will eventually have to pay the price of losing freedom in medical education. The American Medical Association has chosen to follow the more difficult path of trying to raise money from voluntary sources through the American Medical Education Foundation and the National Fund for Medical Education. The only plan for using federal money which we support is a Hill-Burton type plan which calls for one-time grants for construction and renovation of the physical plants of medical schools. We feel such one-time grants are reasonably safe from control.

This stand for freedom in medical education,

* Presented at the Centennial Meeting of the Polk County Medical Society, Des Moines, October 24, 1951.

** Secretary and General Manager, American Medical Association.

which your national association has taken, deserves your support. And so do the medical schools which receive every cent donated, since the American Medical Association is underwriting all operational expenses of the Foundation. I hope each one of you will consider a substantial contribution. Senator Murray inserted in the *Congressional Record* the statement that it was very nice for doctors to volunteer to raise funds among themselves to help medical education but that so far, the results had been very unsatisfactory. I quote him directly from the *Congressional Record*: "And I am glad that the AMA is urging its members every week to individually contribute a hundred dollars a year to the support of our medical schools. But I am sorry to note that during the first 24 weeks of that campaign less than three one-hundredths of one per cent of the country's physicians was in sufficient agreement with the AMA's position to make such an individual contribution. No, gentlemen, that figure is not an error. For over six months the AMA appealed to its members to help solve the critical needs of our medical schools the AMA way. It asked them to do so each week during that period. On August 4, 1951, the *Journal of the American Medical Association* listed the names of the doctors who had complied. They amounted not to 50 per cent of our doctors, gentlemen; not to five per cent—not to three per cent; not even one per cent of the physicians in this country complied. When you add up the list of those who did, you will find that it represents approximately .003; three one-hundredths of one per cent of the doctors of America agree with the AMA's leadership as to how that which the AMA itself calls 'A Challenge to the Medical Profession' should be met."

Nobody at the 1851 Convention said anything about public relations or the importance of maintaining a good doctor-patient relationship. There are probably a number of reasons why we are troubled with this problem today. Doctors handle more patients, so do not spend as long with each one as formerly. Back in 1851 there were not many specialists so almost every doctor was a family doctor who took calls day or night and would spend long hours at little Susie's bedside. Today we have days and afternoons off, and nurses and other aides have assumed many time-consuming duties formerly handled by the physician. The rising cost of sickness, although it has not soared as far or fast as the general cost of living, has magnified the problem. When a patient pays good money for the doctor's bill, he expects and demands the best of service.

So today the American Medical Association is

advocating such things as 24-hour night and emergency call systems and grievance committees to deal with patients' complaints. We have just issued a new plaque for use in physicians' offices. It is designed to encourage patients to talk freely with the physician about any questions or dissatisfactions they may have. We believe many complaints, regarding fees in particular, could be forestalled by frankly discussing how much the treatment will cost. The plaque reads:

"TO ALL MY PATIENTS

I invite you to discuss frankly with me any questions regarding my services or my fees.

The best medical service is based on a friendly mutual understanding between doctor and patient."

These are now available at \$1.00 each from the American Medical Association.

We have heard a lot and read a lot in the public press about the high cost of medical care, and medical care does cost a lot of money. If we study it from the dollars and cents angle alone, we find that the people of the United States spend no more for medical care on a percentage basis than they did a number of years ago. They get a lot more for their money now, however. For instance, when a man had an attack of acute appendicitis 75 years ago, a doctor was called in and charged about \$1.00 a visit; he would put a hot water bottle on the man's abdomen and make not over four or five visits and the patient either got well or died so that the bill was very small. Now the patient is rushed to a hospital. If seen in time, he practically never dies and is out of the hospital in a few days. Voluntary health insurance, of course, is our strong answer to the cost of illness. It is also our best answer to the socializers. The American Medical Association will continue to promote such insurance during the coming year and I hope each of you will also take the time to recommend some form of voluntary health insurance to your patients.

We can not forget that next year is election year—probably one of the most important elections in the history of our country. It is vital that each of us assume his full duty of citizenship, not only by voting ourselves but by encouraging others to vote for those candidates who respect the freedom of the individual.

As an organization the American Medical Association can have no part in politics. But we can urge each one of you to participate actively in the election in your community and state. As men of intelligence and good will, physicians owe leadership to their country. It is time we accepted this duty.

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WHAT SHOULD YOUR JOURNAL MEAN
TO YOU?

Your *Journal* staff has just returned from an editors' conference held in Chicago to discuss problems confronting state journals. One of the subjects mentioned was what the journal should mean to the members. First of all, it can be strictly scientific in nature. This would necessitate a high quality of scientific articles, and since it is only natural that a man preparing a scientific article will prefer to have it published where it will have the widest distribution, the national journals naturally attract and usually procure such efforts. Second, a state journal can be a house organ for its members, carrying organizational material and non-scientific articles for the most part. Possibly the county bulletin is the best exponent of this type of publication and the preferable medium also.

Lastly, the journal can be all things to its members, and that is probably what most state journal staffs attempt to provide. Here in Iowa we carry four or five scientific articles each month, plus a clinicopathologic report whenever possible. Editorials are both scientific and socio-economic. An effort is made to inform members of society activities through the president's page, the News Notes page, publication of minutes of the House of Delegates meeting, and special articles. The Woman's Auxiliary section should be of special interest to Auxiliary members.

At its last meeting, the Publications Committee requested that henceforth the *Journal* carry minutes of all committee meetings so that the members may know what their officers and committees

are doing. It also requested that a page on Blue Shield be carried each month since that picture changes frequently. The Publications Committee further suggested that the general manager prepare a monthly report and that, beginning with the January issue, the editorial staff might experiment with making the personal mention items more informal and including more non-scientific items.

During the past year the face of the *Journal* has been lifted. A newer, more legible type has been used; headings have been made uniform; order has been changed; and a better type of paper for our illustrations has been used. Many favorable comments have been received on these improvements.

Your *Journal* staff hopes that the changes contemplated for 1952 will make your *Journal* more valuable to you. It will appreciate comments and suggestions after the changes have been in effect for a few months, so that it will know how to proceed in the future.

THE ART OF MEDICAL WRITING

In considering the outstanding papers of medical literature, certainly the contributions of Sir William Osler would qualify for this distinction. Oliver Wendell Holmes should be included, particularly for his discussion regarding the transmission of child-bed fever. Perry Pepper is also qualified to be mentioned. A host of other authors could be included with the works of these outstanding physicians which quickly come to mind.

Currently the doctor is besieged with words by the quadrillion, through the press, motion pictures, radio and television. He cannot possibly keep up with this avalanche of pointed material and audio-visual aids*. This leads to the logical deduction that the bulwark of the physician's education at the post graduate level must remain the printed word in his state medical journal.

With the advent of the antibiotics and newer concepts of therapeutics the trends of medical treatment have markedly altered. Discussion of medical problems have become common in the cloakroom of the hospital or at the hospital staff, county society and study club meetings. This freer exchange of thoughts has unconsciously placed a limitation on the preparation of formal papers for publication.

Your *Journal* is still published with the primary purpose of assisting the members of the State Society as much as possible. Well-prepared papers are not only welcome but very much in demand. Even though few authors have the rare attributes of the old masters of the printed word, physicians may still find wisdom in the adage that

* Specialty Journals are apt to prove uninteresting to the family physician because of the length of the papers presented and the abundance of medical jargon pertaining to the specialty.

practice makes perfect. If any member of the State Medical Society has the inclination to prepare a manuscript, please consider that you are invited to submit the paper to your *Journal*.

COMPLICATIONS IN ACTH THERAPY

Many patients taking ACTH or cortisone find it difficult to wean themselves from the drug. When the hormones are discontinued, symptoms recur, together with depression of spirit. They therefore feel compelled to continue the medication. When the doctor urges them to stop medication they often ask, "Are there any harmful effects from taking the medicine for long periods of time?"

Most of the documented complications of cortisone and ACTH therapy such as edema, moon-face, hirsutism, hypertension, diminished glucose tolerance, emotional instability, potassium deficiency, perforated duodenal ulcer, and suppression of thyroid function, have been described following short term therapy. Most of these complications disappear quickly upon cessation of treatment, or reduction of dosage.

Very few reports list the complications of long term therapy. Fortunately the high price of the hormones usually prevents long continued large dosages. It is fortunate, also, that most "long termers" do not require large daily doses for relief of symptoms. There have been no reports to date of permanent diabetes, or Addison's disease resulting from ACTH or cortisone therapy.

Infection, however, is one complication of long term therapy to which all users must be alerted. Cortisone and ACTH diminish serum globulin, circulating lymphocytes and the lymphoid tissue through the body. Thus, antibody formation and transport is curtailed. The patient therefore may develop a serious infection, unaccompanied by fever or malaise; the physician may be blissfully unaware of the existence of such an intercurrent infection and may permit his patient to die from it. Rats treated with cortisone and ACTH frequently die of multiple pulmonary abscesses.¹ Patients with latent or mildly active tuberculosis may suffer a cryptogenic recrudescence of their infection, and children treated for leukemia have died from rampant infections.

Perhaps in the future, some pituitary hormone may be discovered which will counterbalance the antibody destroying effect of ACTH and aid in combating infection, but until this day arrives, clinicians must be on the alert for infections occurring in cortisone treated patients. When infections are discovered, they must be treated with all the vigor at our command.

EXHIBIT SPACE AT ANNUAL MEETING ALL SOLD

Invitations to exhibit at our 1952 meeting were mailed early this month and all space has now been sold. As was mentioned in an earlier *Journal*, some firms always participate and we are most grateful for their support. We are happy to welcome back two or three firms who have not been with us the last two years, and we are most appreciative of the fact that four firms, not previous exhibitors, have taken space.

Exhibitors will be housed on the lobby floor of the Ft. Des Moines hotel, on the mezzanine and in the south ball room. Intermissions of half an hour have been allowed both morning and afternoon so that physicians may visit the exhibits and discuss new products and equipment with the exhibitors. These firms not only help support the meeting by their financial participation; they also bring information of new pharmaceuticals, equipment, and methods of administration. They have much to offer the physician if he, in turn, is courteous enough to share some time with them.

Our exhibitors are reserving the dates of our meeting—April 28-30. Let's do likewise ourselves.

THE NORTH CENTRAL CONFERENCE

The annual meeting of the North Central Conference, held in Minneapolis, November 11, was well attended by physicians from North and South Dakota, Nebraska, Iowa, Wisconsin and Minnesota. Dr. Fred Sternagel, in his presidential address, discussed various practices for which the medical profession is criticised by the public and urged physicians everywhere to do all in their power to eliminate points of friction and to give the best service possible to their patients.

The morning was devoted to a symposium entitled: "Human Relations is Public Relations." Mr. Merrill C. Smith, executive secretary of the Nebraska State Medical Association, started the discussion by calling attention to the fact that the practice of medicine has become more of an assembly line matter today because of new advances in drugs, transportation, hospitalization, and so forth. The doctor today sees many more patients than he did 30 years ago and this has tended to make him seem more remote from his patients. The art of the practice of medicine has not kept pace with the science of medicine. He cited causes of discontent and said each individual physician must be upright if any program of better public relations is to succeed. Physicians are privileged persons and so have a certain obligation which they must meet.

Miss Naomi Peterson, Assistant Professor in the School of Business Administration of the University of Minnesota, spoke on personnel in the doctor's office. She stressed the fact that office personnel has, in many instances, more contact with

1. Selye, Hans: The Influence of STH, ACTH, or Cortisone Upon Resistance to Infection: CANAD MAJ: 64:489-493 (June) 1951.

the patient than the doctor himself. It is important that such persons have a pleasant relationship with the patients, that they be friendly, keeping in mind the personal idiosyncracies and preferences of different patients, and that they respect the dignity and privacy of the patient. A good telephone voice is a definite asset. They should be instructed how to screen the doctor's telephone calls so as to save him unnecessary bother and yet not make it impossible for patients to talk to him. A reception room should be well arranged. Wearing of a uniform helps because it gives an air of authority, but a nurse should not be too severe. Office personnel must be instructed in the ethics of medical care.

She said it was difficult to recruit girls for work in doctors' offices and this is the fault of the medical profession. Business offices are attractive because of more regular hours, payment for overtime or compensation for time off, bonuses and possibly profit sharing. Some physicians do not recognize their office personnel as assistants, but more as machines. A good assistant can be a doctor's most valuable ally and the wise doctor will instruct his assistant in how he would like her to manage his office and recognize her rights in working conditions.

Dr. E. M. Hammes of St. Paul, past president of the conference, discussed the doctor's responsibility to his patient. He said the old family physician unconsciously practiced psychosomatic medicine and that all physicians could practice better medicine if they did likewise. He cautioned against carrying worry into a patient's room, and said bad manners of physicians is the thing that irks patients most. Dr. Hammes has had much experience with legal aspects of medicine and said malpractice insurance is necessary today. A strict regard for ethical conduct between physicians will give better medical care to the patient.

Mr. Earl Cheit, Research Fellow for Industrial Relations Center of the University of Minnesota, reported there is a mounting public concern over the economics of medical care. He said it was inconceivable that the medical profession should worry about public relations because the individual doctor is held in such esteem. People understand their doctor but they find medicine itself mysterious. The physician should discuss finances and methods of payment fully with the patient and work out a satisfactory procedure. All bills should be itemized.

Dr. Joseph D. McCarthy of Omaha, another past president of the conference, discussed the interpretation of medical care costs. Too many people say "my doctor bill" when they really mean the hospital, drug, nursing and other bills as well as the one they receive from the physician. In the early days the doctor's bill was the only one, but as these other services have expanded and been utilized, they exact a large toll of the patient's dollar, larger than the medical fee itself, yet the

patient too often does not differentiate between the various items. Dr. McCarthy presented comparative cost increases showing physicians' fees had risen less than any other.

Mr. George Jensen, vice president of the Maico Company of Minneapolis, summarized the morning remarks, saying the talks might well be titled "How to Win Friends and Influence People in Favor of the Private Practice of Medicine." He agreed that there are points of friction which should be ironed out and said the medical profession was doing a good job in trying to eliminate them. One thing which was not doing the profession any good, a thing not mentioned during the morning, was the recent disclosures of hoarding of large sums of money by physicians.

Following luncheon, Dr. Gunnar Gundersen of La Crosse and Dr. L. W. Larson of Bismarck spoke as trustees of the American Medical Association, mentioning particular phases of the work which they had been doing recently. Dr. Ernest B. Howard, assistant secretary of the AMA, spoke of membership in the AMA, trying to clarify the payment of dues.

Mr. Tom Hendricks, secretary of the Council on Medical Service of the AMA, was forced to curtail his talk on "Your AMA," but was able to give a concise description of the many activities of the AMA by the use of illustrative charts.

Dr. Joseph S. Lawrence, director of the Washington office, talked informally on the legislative outlook for 1952, briefing those present on what may be expected. He said 1952 might well be one of the most critical years in history. One group believes the Constitution is doomed unless a change is made; another believes you should not change horses in the middle of the stream. The 82nd Congress will hold a second short session, but should adjourn early. It has not been a rubber stamp but it has not been consistent either. Dr. Lawrence mentioned bills that may be considered in the next session. He said the Washington office will send out three special bulletins within the next two weeks giving a thumb nail biography of the men with whom the medical profession deals.

Mr. Frank E. Smith, director of Blue Shield Medical Care Plans, spoke of the growth of the association since its organization as Associated Medical Care Plans in March, 1946. From nine charter members, the plan has grown to include 77 members in 42 states and some of the territories. The name "Blue Shield" to identify medical society plans was adopted in 1948. Member plans must meet certain standards, including free choice of physician to patient, professional sponsorship, and be nonprofit. There are six states without Blue Shield plans.

At the end of 1950, gross figures for coverage were as follows:

Hospitalization	76,961,000 people
Surgical	54,477,000 people
Medical & Surgical	21,000,000 people

For the same year, Blue Cross covered 38,000,000 of the 76,000,000, and Blue Shield covered nineteen and a half million. On September 30, 1951, Blue Shield covered 21,000,000 persons.

The national enrollment agency is getting under way. Service benefits are becoming increasingly important. Service is the one unique feature of Blue Shield. Fifty-five of the 77 plans offer the public some measure of service plan. Physician acceptance of the idea is interesting. Dr. Hawley is opposed to the principle as a doctor but committed to it as a citizen. Mr. Smith said 113,000 physicians are participating in Blue Shield plans, or 87 per cent of those in active practice. He said income ceilings are going up, as an economic adjustment to inflation. Some plans are experimenting with insurance to cover catastrophic illness; others are trying a deductible type policy. Basic principles of insurance must be observed in all of these.

In conclusion Mr. Smith said that whereas in the beginning there was some misunderstanding with the AMA about the purposes of his organization, all was now sweetness and light.

Dr. R. E. Fitzgerald of Milwaukee presented the final paper which was listed as: "Are Grievance Committees Serving Their Purpose?" and said he felt the day's program had been a demonstration of "Why Grievance Committees?" He enumerated three reasons for grievance committees: (1) In compliance with our Hippocratic Oath we should give the utmost consideration to the patient; (2) Policing our own organization will help maintain the private practice of medicine; and (3) A concerted effort to mediate with the public constitutes the best public relations. All grievance committees are striving to make for better relations between the doctors and the public. Doctors must supply the public with the best medical care. It is the responsibility of the medical profession to police itself, but grievance committees must investigate the validity of all complaints and make recommendations. Such committees have no punitive power but have a great educational power and influence. They should be publicized so that persons will know they have a channel of appeal. They can do more for public relations than any other committee of a society.

Business transacted included increasing the dues from \$75 to \$100 a year; a vote of thanks to Mr. Rosell for his part in arranging the program; elevation of Dr. Floyd Rogers of Lincoln to the presidency; Dr. Russell Brown as president-elect; and Mr. R. R. Roswell as secretary-treasurer.

INTERNAL REVENUE OFFICE RULING ON ASSISTANT'S FEES

The Department of Internal Revenue has been engaged for some time in reviewing physicians' income tax reports, among others, and the agents have been disallowing assistant's fees. This is a matter of great interest to many Iowa physicians

and it seems well to make this statement concerning the matter. The facts stated have been compiled by our legal counsel, Mr. I. W. Myers.

Under the sharply defined national policy of the American Medical Association describing particular kinds of conduct, and also under Section 147.56, Code of Iowa, 1950, which disapproves fee splitting unless the consent of the patient is obtained, the Department of Internal Revenue has taken the position that it is a violation of a conduct defined, and upon that basis is disallowing the item as deductible. In this connection, we call your attention to Section 147.56, Code of Iowa, 1950, which provides as follows:

"For the purposes of Section 147.55, unprofessional conduct shall consist of any of the following acts:

"Subdivision 4. Division of fees or agreeing to split or divide the fees received from professional services with any person for bringing or referring a patient or assisting in the care or treatment of a patient without the consent of said patient or his legal representatives."

The Department of Internal Revenue bases its stand on (1) state laws; (2) Code of Ethics of the medical society; and (3) the decision of the Tax Court involving *Lilly vs. Commissioner*, 14,120 P-8-TC 1950. This Tax Court case involved an optical company which paid back to ophthalmologists \$3.00 on each pair of glasses dispensed. Since the Department received a favorable verdict from the Tax Court on this case, it has gone one step further and is now concentrating on all assistant's fees paid by doctors with special emphasis given to surgeons.

With the Department of Internal Revenue taking this position, the taxpayer could appeal to the Tax Court, but he would be faced immediately with the *Lilly* decision and also with the provision of the Iowa Code hereinbefore quoted. The taxpayer could also appeal to the Federal District Court, but he would be faced with the question of whether or not the payment was made for an assistant or was splitting fees, with the ultimate issue depending on whether or not the payment was a violation of a sharply defined national or state code of ethics describing particular kinds of conduct, and also this section of the Iowa Code hereinbefore referred to. This statute could be called the sharply defined state policy involved.

It seems that the Department is taking the position that a split fee is any fee paid to another doctor for services rendered when the patient does not have knowledge of the payment being paid. Therefore, if patients are not informed, it would be rather difficult to prove that the particular practice the doctor is following is not contrary to the sharply defined state policy.

As a solution, it is recommended that each doctor bill the patient separately and then there can be no problem, because this is clearly no violation of ethics nor of the statute, since the patient

knows that each doctor is charging him and there is no secret agency of which he knows nothing. This seems to be the only safe course to follow.

Under the present policy of the Department of Internal Revenue, the physician who bills the patient is liable for income tax on the entire payment. He will not be allowed to deduct assistant's fees. If he has done so on past returns, he may be faced with additional taxes, penalties and interest.

It seems evident that the Department of Internal Revenue will continue to push this matter and for that reason serious thought must be given to the problem by physicians whom it affects. A test case might be taken to the Federal District Court, but the physician first would have to pay the additional assessment under protest and file suit against the Collector of Internal Revenue for a refund. If he protests without payment, it is a matter for the Tax Court to decide and it already has the Lilly decision in its favor to use as precedent. So far no decision seems to have been made by the Federal District Court.

The matter of national or state policy on codes of ethics is the responsibility of the national and state medical societies. They could, if they wished, modify the existing codes of ethics. The statute involved, however, is within the province of the Iowa Legislature. It is the only body which has the authority to change the statute and it is problematic whether it would do so.

For these reasons it would seem advisable for physicians to review their procedure of billing patients for services rendered, and make sure they are conforming to the Code of Ethics of the American Medical Association and the statutory provisions of the Code of Iowa. Failure to do so may impose heavy financial burdens in the way of additional assessments, penalties and interest for income tax due.

Mr. Myers goes one step beyond setting forth the facts; he advises that a test case be carried to the Federal District Court. It is his personal opinion that many physicians may be able to establish the deductibility of assistant's fees under certain conditions. It is his recommendation, however, that in the future physicians render separate bills for their services.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

MEETING OF THE COUNCIL

The Council of the Iowa State Medical Society met at Hotel Commodore in Des Moines Thursday morning, November 1, with all members present but two. Absent were Doctors M. T. Morton (illness) and I. K. Sayre. Also present during the day were Doctors R. D. Bernard, A. B. Phillips, H. H. Smead, B. Stickler, R. C. Gutch, and J. D. Conner, and Mr. L. C. Murray of the State Department of Health.

Mr. Murray told of the work being done in the Health Education Division of the State Department of Health. He pointed out that the Code of Iowa instructs the Health Commissioner to carry on definite health education. He spoke of the value of a co-operative effort between the State Department of Health and the Medical Society, and stressed the interest being displayed in public health by the public as a whole. He asked for a cooperative program between the State Society and the Department.

Dr. Smead spoke of the goals of the Committee on Industrial Health but said no action had been undertaken as yet.

Dr. Gutch presented the present status of the Veterans Home Town Medical Care program. Dr. Stickler asked for the help of the Council in presenting postgraduate courses and also in compiling a list of speakers who might address public meetings in different parts of the state. Dr. Conner reported on the various health council meetings he had attended.

The Council voted to offer its cooperation to the work of the State Department of Health on public health education; it promised to aid the Speakers Bureau in getting speakers; it voted disapproval of the VA policy of giving medical and hospital care to non-service-connected disabilities and disapproved of the payment of health and accident insurance to VA hospitals for such cases; and tabled Dr. Smead's report for further consideration after pointing out the program had already been approved by the House of Delegates in April.

The meeting adjourned at four p. m. after a six hour session.

MEETING OF THE BOARD OF TRUSTEES

The Board of Trustees met in the central office Sunday morning, November 4, with the following persons present: Trustees R. N. Larimer, L. A. Coffin and J. W. Billingsley; B. T. Whitaker, president-elect; R. D. Bernard, general manager; A. B. Phillips, secretary and Boyd Anderson, treasurer.

Minutes were approved and bills authorized. An offer to buy a building for the central office not having been accepted, the board discussed another building, inspected it, but decided against it because of its condition and the fact that it is on rented ground. The Polk County Woman's Auxiliary was voted \$100 to help with the expenses of the annual meeting; the quarterly report of the Grievance Committee was read and filed; purchase of an electric postage meter and 3,000 reprints of a series of articles on medical problems from the Cedar Rapids Gazette were authorized; publication of minutes of committee meetings was requested so that the membership may know what the committees are doing; publication of a special article dealing with income tax problems was ordered; the television program was discussed; and the time for setting up the 1952 budget was set for December 15 at ten a. m. After four hours' deliberations, the meeting adjourned.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 505 Bankers Trust Bldg., Des Moines 9, Iowa.

General Manager's Page

In order to keep the membership of the Society better informed concerning the many activities of the State office, the Trustees have authorized the General Manager to prepare a monthly review of these activities. During the past year the "News Notes" from the Committee on Medical Service have kept you informed of this committee's work. And Dr. Conzett's "President's Page" has brought you valuable information concerning the Trustees, Council, Procurement and Assignment, and the Committee on Medical Service.

I hope that, as you read these reports, you will feel free to make suggestions concerning subjects on which you desire more information, and also about activities which you think should receive more attention. Information will be given you concerning the fine work being done by the Reactivated Council, the Speakers Bureau, Health Education, coordination of many of the Society's activities, the increased number of younger men on the Society's committees, public relations activities with lay groups, especially those concerned with public health, etc. And you will hear about all new activities, too.

DISTRICTS IMPROVE

Special mention should be made of the excellent meetings held in the First and Eleventh Districts last month. It has been a difficult job to reactivate these districts, but the councillors have made a good start with the cooperation of the membership in the county societies who realize the many advantages of a strong district organization.

Heading the list of new activities which have received little state-wide publicity is our Television Program over Station WOI-TV. This new approach to the public relations of health education was authorized in June, 1950 by the Trustees. The entire subject was then given careful study for approximately eight months. The AMA has pioneered with script production and production packets. Our first show was presented in May, 1951. Since that date we have continued a bi-monthly half-hour program. Up until October the show appeared on Friday nights, but we are now fortunate enough to have Wednesday night time assigned to us from 9:30 to 10 p. m.

DOCTORS ON TV

Station WOI-TV not only gives us free time but also assists in the preparation of "props" and has been most cooperative in the many hours of practice which such a production requires. Physicians from Mason City, Cedar Rapids, Iowa City, Ames and Des Moines have appeared on the programs, and we have three moderators now available: Dr. Arthur D. Woods of State Center, Dr. Gail McClure of the Iowa State College Hospital and Dr. Jack Spevak of Des Moines.

The work and time required for those who participate in this program is great and they deserve much praise for the sacrifices they have made and the outstanding job which they have done. The programs are set up six weeks in advance and scripts are in preparation at least three months in advance. Cost to the Society is moderate. The station reaches over 60,000 TV sets and has a population of 600,000 in the area covered. Plans are rapidly maturing for reproducing our programs on platters, so that they can be used by all county societies in the State.

YOUR OPINION?

Reception, both professional and lay, has been satisfactory. We are most anxious to have your reactions to the programs; especially your criticisms and suggestions as to how to improve them, and your ideas for future subjects that might be presented.

Our schedule of television programs for the immediate future is:

Dec. 5, 1951, 9:30 p.m. "So You Can't Sleep?"

Dec. 19, 1951, 9:30 p.m. "Cerebral Palsy"

R. S. Bernard, M.D.

General Manager

NEWS NOTES

From The Committee On Medical Service

GRASS ROOTS PROJECTS—SUGGESTED COUNTY MEDICAL SOCIETY PROGRAMS, 1952

The Committee on Medical Service has several types of programs which it will conduct in cooperation with county medical societies. These programs have developed as a result of county society demands and suggestions of officers of the State Society. The purpose is to bring the State Society closer to its members as well as to improve intra-professional, interprofessional and public relations.

Several county medical societies have held these meetings so that they are no longer experimental. Following is a list of the meetings and subjects which are discussed:

MEDICAL-RADIO-PRESS

The importance of cooperation and understanding between the press and medical profession is considered essential and so we have begun arranging county medical-radio-press meetings in order for the groups to meet together in an effort to iron out any problems. A medical-radio-press Code of Cooperation has been developed by the state associations of the medical profession, radio and press. We believe the meetings afford an excellent opportunity for the representatives of these groups to become better acquainted with the purposes and functions of this cooperative code.

The Public Relations Department of the American Medical Association has made favorable comment about our activity in medical-press relations here in Iowa. Undoubtedly, these meetings will have the greatest effect in the more populous counties but even so we want to encourage them in any county which sees a need for improving medical-radio-press relations.

PHYSICIAN-PHARMACIST MEETINGS

Thirty-six county physician-pharmacist meetings have been held in Iowa as of November 1.

These meetings were started about two years ago, following the suggestion of the Iowa Inter-professional Association. The primary purpose for holding them is to improve relations between the doctors and pharmacists by giving them an opportunity to air their complaints thoroughly. It is planned to include other professional health groups in these meetings soon.

One of the most important subjects of discussion at the doctor-pharmacist meetings is the legal obligation of the physician in writing a prescription and the pharmacist in filling a prescription. The executive secretary of the Iowa

Pharmaceutical Association discusses laws that pertain to drug dispensing. Other topics are physician dispensing, pharmacist counter-prescribing, health projects, legislation, etc.

This activity in Iowa received national recognition in the August issue of the magazine *American Druggist*. We quote the opening comment of the article: "Doctors and druggists of Iowa wiped out interprofessional friction through a plan that might well become a national pattern."

DOCTORS' SECRETARIES AND NURSES MEETINGS

The committee on Medical Service has assisted in the development of meetings of doctors' office personnel, to educate them on State Society sponsored projects, the most important being Blue Shield and Veterans' Home Town Medical Care.

Since Blue Shield is sponsored by the medical profession, the State Society has assumed part of the responsibility for educating doctor's office personnel. Results can be observed in improved claim blanks, fewer letters from Blue Shield to the doctors advising that a service is not provided by the plan, increased enrollment, a better understanding of the philosophy of full service benefits under Blue Shield, a reduction in the number of complaints from subscribers—in all, a better understanding of the voluntary method of budgeting for medical and surgical expense.

As far as we know, Iowa is the first state to develop a program of education for doctors' office personnel. Many states have asked us for our pattern.

BLUE CROSS-BLUE SHIELD MEETINGS WITH COUNTY MEDICAL SOCIETIES

The Committee has encouraged each county medical society to invite a speaker from Blue Cross-Blue Shield who can inform the doctors how these companion plans for hospital, medical and surgical care work. The frequent changes in benefits and administrative procedures in Blue Cross-Blue Shield make it necessary for these plans to be discussed periodically before every county medical society.

It is the hope of the Committee on Medical Service that the program chairman, planning his program for 1952, will recognize the need for and attempt to schedule one or all of these meetings during the ensuing year. This committee is prepared to assist at any time. For further information, write the central office.

WOMAN'S AUXILIARY NEWS

MRS. KEITH M. CHAPLER, *Chairman of Press and Publicity Committee*, Dexter, Iowa

President—MRS. HOWARD W. SMITH, Woodward

President-Elect—MRS. J. DONALD HENNESSY, 205 Frank St., Council Bluffs

Secretary—MRS. CHARLES F. LOWRY, 246 Lincoln, Council Bluffs

Treasurer—MRS. DWIGHT C. WIRTZ, 449-56th St., Des Moines

TO COUNTY AUXILIARIES

May I suggest that you invite your District Councilor and a State Officer to one of your meetings. This promotes auxiliary fellowship. Both the state and county auxiliaries will benefit by the interchange of ideas. You will find the names of the District Councilors and State Officers in your Year Book.

MRS. HOWARD W. SMITH, *President*.

FINANCE COMMITTEE

The Finance committee for the State Medical Auxiliary wishes to remind the individual members and county treasurers that the state dues for 1951-1952 were raised to \$2.00 at the last convention. Therefore the state treasurer should receive \$3.00 from each member to cover \$1.00 national dues also. It will greatly aid your state treasurer and in turn your national treasurer if you will be responsible for sending these on time; that is, before March 1, 1952. If you are paying to a county treasurer she should have the payment previous to this so her report can be ready on that date. Members-at-large will send their dues to the state treasurer, Mrs. D. C. Wirtz, 449 56th, Des Moines, Ia.

MRS. WILLIAM B. CHASE, JR.,
Finance Chairman.

THE Y.W.C.A. HEALTH EDUCATION PROGRAM

The Y.W.C.A. Health Program includes a required medical examination which (1) emphasizes a regular complete medical examination by the family doctor; (2) refers the individual who is in need of further care to her family doctor for treatment or observation; (3) helps the individual to understand her own physical condition and requirements. Nutrition is studied in regard to diets which promote energy and well-being and those which prevent overweight.

There is a Y.W.C.A. in 17 cities in Iowa and there is the Iowa District Y.W.C.A. which has work in 60 communities in Iowa, rural and urban, such as: Perry, Indianola, Ames and Winterset.

MRS. CLAIRE MITCHELL.

ACTIVITIES OF COUNTY AUXILIARIES

The Clay County Auxiliary has recently presented the Student Nurse Loan Fund with a check for \$25.00. In view of the fact that this Auxiliary has only eight members, the accomplishment is decidedly inspiring. Mrs. Dean King, who is Legislative Chairman for Clay County Auxiliary, is also President of the Inter-Club Council of Clay County Women's Organization. This latter group has a membership of 110 comprised of two voting members from each of the organizations in the county, including Farm Bureau, church and social groups, drama clubs, etc. By holding a silver tea and open house at the time of council meeting, a large attendance is assured and many types of organizations are made conscious of Auxiliary efforts.

The October meeting of the Auxiliary to the Black Hawk County Medical Society was held in the Convair Room at the Waterloo Municipal Airport. Mrs. G. A. Bairnson, Pres., read a letter from Dr. Craig Ellyson of Waterloo asking the Auxiliary to co-sponsor an essay contest which will be open to the 7th, 8th, 9th and high school pupils, also the parochial high schools. The subject of the essay will be "The Private Practice of Medicine Furnishes the Finest Medical Care."

Marjorie Oesterle, Pres., and Barbara Rainbow, both of West High and members of the Future Nurses Club of Waterloo, addressed the assembly outlining the hopes and objectives of the Club. They were introduced by Mrs. Carl Hanson, Chairman of the Nurse's Recruitment and Student Loan Committee. They were accompanied by Mrs. Emerson, Faculty Sponsor. In an effort to increase the Loan fund Mrs. Herbert Shulman made a motion that the Auxiliary sponsor a dance. The motion was unanimously approved.

The second annual Craft and Hobby Sale for Crippled Children and Adults was held Oct. 11, 12, and 13 in the James Black Dry Goods Store. The proceeds of the sale, which are returned to the handicapped, totaled \$491.60.

HELEN BICKLEY,
Corresponding Secy.

One of the colorful social activities of the autumn season was the annual tea Thursday afternoon, October 25, given by the Woman's Auxiliary to the Boone County Medical Society in honor of the senior girls from high schools of Boone County who are interested in the nursing profession. The guests were invited to the home of Mrs. John Herman from 3 to 5 o'clock.

A large number of girls attended from Ogden, Madrid, Luther, Napier, Boxholm, Jordan, Pilot Mound, and from Boone High School and Sacred Heart School of Boone.

Miss Jessie Norelius of Des Moines, Executive Secretary of the Iowa State Nurses' Association, gave an informal and interesting talk about the nursing profession and told how nurses' training can help young women in many different types of work. Her talk was followed by an informative question and answer period, giving the seniors an opportunity to ask questions about nurses' training and qualifications for certain positions.

During the afternoon tea was served from a lace covered table, centered with a long low arrangement of dark red roses and Chinese forget-me-nots. The table was lighted with ivory tapers in silver candelabra and appointed with silver service.

Those attending the tea other than the honored seniors and members of the Auxiliary were the following guests: Miss Catherine Hall, superintendent of nurses at The Boone County Hospital; Miss Betty Simon, public health nurse of Boone County; Mrs. W. T. Ericson, city nurse; Mrs. Joel Carlson, school nurse; Mrs. Susan Crane, school nurse at Ogden; Sister Mary Dolorita and Sister Mary Gregory of Sacred Heart School, and Miss Vaughn Thornburg, girls' advisor at Boone high school.

MRS. THOMAS E. KANE.

THE AUXILIARY AND ALLIED INTERESTS

STATE CONFERENCE ON CHILDREN AND YOUTH

Your Auxiliary was represented at the State House Conference on Children and Youth and the Iowa Commission on Children and Youth held October 17 at the State House. More than 500 adults and over 100 Junior and Senior high school and college students participated in the Conference. Youth development was discussed in six different sections: Home and Family Life, Education and Life Adjustment, Religious and Spiritual Values, Employment and Vocational Guidance, Civic Responsibility, and Recreation and Leisure Time. Problems facing youth were outlined and methods and resources for meeting them on a community basis were set up in each group.

Dr. Henry Helmholtz, Mayo Clinic, Rochester, Minnesota, Chief Consultant of the Midcentury White House Conference on Children and Youth,

was the speaker at the banquet at East High School. He discussed "The Role of the Physician in the Community in Developing Healthy Personalities in Children," emphasizing progress in infant mortality, the use of new drugs in the reduction of disease, and the establishment of a Child Health Clinic in Rochester. At present, accidents are the greatest cause of death.

Dr. Helmholtz said:

"We have not realized enough the effect of mal-adjusted parents on the growing infant. The growing child must pass through a number of stages before arriving as a mature adult and it is this process in which parents play the most important role. Through the physician, the child can achieve a sense of security and of being an independent being. The education for parenthood begins at birth and extends to the parenthood of the next generation. It will take the education of all toward better health, more research into the problems, and the cooperation and coordination of all groups if we are to achieve future maturity in our children."

MRS. NOBLE IRVING, JR.

IOWA COUNCIL FOR BETTER EDUCATION

Your Auxiliary was represented at a meeting of the Iowa Council for Better Education October 8, at the Kirkwood Hotel in Des Moines. This group is working to improve education throughout our state by the cooperation of the educators and all interested groups. Excellent talks by Dr. Dwight Curtis of Iowa State Teachers College and Mr. Clyde Harden of Meredith Publishing Company preceded a thought inspiring panel presented by Dr. George Myer, Dr. Denny Woodworth and Dr. Alfred Schwartz of the Drake University Faculty.

The speakers impressed us with the need for more emphasis on counseling in our schools. There is a great need for vocational counseling as well as personal counseling. Three important points were brought out in the panel discussion. Our young people need help in learning to adjust to the situations they are meeting daily so that they can cope successfully with their experiences in the future. They can be taught more successfully if given the opportunity to do some thinking so that they can make good choices. They should be allowed to take a more active part in community affairs. The schools should provide every student an opportunity to grow and develop as far as he can go.

MRS. L. K. SHEPHERD,
Second Vice President.

MEDICAL AND VETERINARY

Mrs. J. F. Gerken and Mrs. C. A. Hanson of Waterloo attended the First District meeting of the Medical and Veterinary Societies at Strawberry Point, October 9. Mrs. Gerken summarized the

State Auxiliary program and commented on "Today's Health" and Mrs. Hanson discussed the Nurse Recruitment program.

PUBLIC RELATIONS

- I. Interprofessional Relationships
 1. Doctor-nurse relation
 2. Patient-nurse relation
 3. Active membership in professional organizations
- II. Inter-Club Cooperation
 1. Distribution of Clay County Health and Service Bulletin to County Auxiliary
- III. Stimulate interest in Blue Cross and Blue Shield, sponsored by the Iowa State Medical Society.

So that we may exist as a successful Auxiliary, and carry out the objectives of the medical society with its approval, the Committee on Public Relations is encouraging members to local action among people they know in order to influence public opinion in the community against compulsory health insurance. In clubs, church groups, in all social contacts, and through participation in various programs of public health and medical service, members are urged to promote this project by unobtrusive and tactful, but at the same time well-informed and firm, action.

Let each organization maintain and improve good relations with allied professions, particularly that of nursing. Especially we must work for better understanding between doctors and nurses. In this direction meetings can be planned and scholarships offered to interest girls in nursing and to stimulate concern of doctors' wives in their welfare after graduation.

In everyday life, in the group or as individuals, we must better our relations with the public and convince it by irreproachable conduct, tact, and understanding that the Doctor is concerned with the well being of each as a person and that his private services are their valuable heritage.

MRS. THOMAS E. KANE, *Chmn.*

MRS. BRUCE F. HOWAR,

MRS. DEAN H. KING.

REVISIONS IN THE STATE BY-LAWS ADOPTED AT THE ANNUAL MEETING IN SIOUX CITY, APRIL, 1951

ARTICLE VI

Section 1. At each annual meeting the voting delegates, upon recommendation of the board, shall fix the amount of the per capita dues of all members, such per capita dues consisting of dues to the State Auxiliary and to the Woman's Auxiliary to the American Medical Association.

Sec. 2. The annual dues shall be payable on or

before January 1 of the year for which they are levied and are delinquent after March 1 of that year.

Sec. 3. The State Treasurer shall forward the National per capita dues to the National Treasurer on the date fixed by the National Auxiliary.

ARTICLE VII

Section 1. The officers of this Auxiliary shall be a President, a President-elect, a First Vice President, a Second Vice President, a Recording Secretary, a Corresponding Secretary, a Treasurer, and one Councilor from each Councilor District. The Councilor Districts of the Woman's Auxiliary shall conform to those of the Iowa State Medical Society.

Sec. 2. These officers with the exception of the Corresponding Secretary shall be nominated by a committee and elected by ballot at the annual meeting. The President, the President-elect, the Vice Presidents, the Recording Secretary and the Treasurer shall be elected for a term of one year or until their successors are elected. There shall be one Councilor from each Councilor District. Four Councilors shall be elected each year for a term of three years with the exception of the third year when the number of Councilors elected shall correspond to the remaining number of Councilor Districts. The Corresponding Secretary shall be appointed by the President.

Sec. 3. The Nominating Committee shall consist of five members, two of whom shall be appointed by the President, and the remaining three elected by the Board of Directors at the fall board meeting. The chairman shall be appointed by the President. Nominations shall be called for from the floor at the annual meeting. When there is but one nominee for an office it shall be the duty of the Secretary to cast the elective ballot for said nominee.

ARTICLE VII

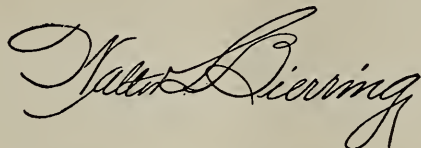
Sec. 7. The Councilors shall lend all possible assistance in promoting county organizations and membership at large and assist in coordinating the work of the Auxiliary.

CLINICAL PATHOLOGIC CONFERENCE

(Continued from page 502)

ficiency. Later pain developed on one side. Because of this the home physician, who knew about the other type of treatment, decided to drain the cysts. He performed the operation. I had the opportunity to see this patient after the procedure. There was a tremendous improvement in the renal function as measured by ordinary tests. Moreover, the hypertension had disappeared. That was a striking example to us and again brought to our attention the possibility of doing this type of procedure in some of these patients.

STATE DEPARTMENT OF HEALTH



TEAMWORK IN THE SEARCH FOR TUBERCULOSIS

The co-existence of an official agency and a non-official or voluntary agency very frequently tends to reinforce the programs, activities, personnel and policies of each other without excessive duplication of administration of projects. This is particularly true in the field of public health where a health department at a state or local level is aided by the several voluntary health agencies. The American Cancer Society works closely, yet in a varying field, with the division of Cancer Control. The same can be said of Visiting Nurse Associations in their relationship to the Division of Public Health Nursing, or the Iowa Tuberculosis and Health Association in relationship to the Division of Tuberculosis. These and other non-official agencies support and extend the activities of the Division of Health Education.

A pertinent example of this is the cooperative case-finding program jointly financed and administered by the Iowa State Department of Health and the Iowa Tuberculosis and Health Association. During the past year the official and voluntary agencies have worked closely to:

1. Give specific attention to the advance education and organization efforts prior to the county-wide X-ray surveys in order to gain the maximum participation;
2. Develop a new code system to aid in the evaluation of survey findings;
3. Intensify technics of proper follow-up of all patients to final diagnosis and supervision of whatever medical care may be indicated.

Often by mutual consent, new programs are planned or existing programs altered to fit program needs. This happened during the past year when it was agreed by the Division of Tuberculosis and the state tuberculosis association to accelerate the case-finding program by the addition of two mobile units and to renovate the existing units so that all would be uniform. It has been the experience of those working with the tuberculosis case-finding program, that only about 12 counties could be reached in a year in the county-wide X-ray survey. With the addition of two more units, it may be possible to reach many more counties a year, thus, offering a county program more frequently.

In order that progress may be achieved, long-range plans must be adopted which are mutually agreeable. At present, plans are being made, preparatory to an epidemiologic survey of the state, to find where there may be concentrations of tuberculosis or to find areas which may be comparatively free of the disease. This survey should sharpen the effectiveness of our case-finding efforts.

Correspondence and conferences have tied together the State Department of Health and its Division of Tuberculosis, the Iowa Tuberculosis and Health Association and the National Tuberculosis Association and the U. S. Public Health Service. Before the survey is undertaken, these official and voluntary agencies will have a thoroughly defined plan of operation.

The death rate for tuberculosis in Iowa in 1950 was eight per 100,000 population, an all time low, and third lowest in the United States. Conversely, the new-case rate was 32.4 per 100,000 population. There were 851 new cases of tuberculosis reported last year, according to the Division of Vital Statistics. An increase in new cases reported has followed an irregular pattern upward which may reflect better methods of reporting new cases or it may be a true picture of the increase of morbidity. However, it is interesting to note that in 1950, a little over 42 per cent of all tuberculosis deaths were also listed as new cases.

Another factor is appearing in tuberculosis morbidity figures in Iowa. The age of the patient now averages older than it did five or ten years ago. In new cases reported in 1950, 45 per cent were in the 30 to 60-year age range. It is felt that the epidemiologic survey may throw much light on age, occupation, income brackets and other factors in tuberculosis control.

As was noted in the opening paragraphs, the State Department of Health has its collateral groups working closely with it. There is significance in the fact that wherever tuberculosis associations are found, they are primarily interested in close community organization for improved health, especially the control of tuberculosis.

The local tuberculosis association, supported by funds from the sale of Christmas Seals every year at Christmas time, carries on a program of health education and assists (if necessary) in the public health nursing program—either in financial sup-

port or in nurse recruitment. The local tuberculosis association participates in education, organization, and financing in part of the county-wide case-finding program or the contact program. Yet, none of these programs would have value were it not for participation and sharing by the state and local departments of health.

Interrelationships of all agencies, official, voluntary, commercial, private, makes for excellent community organization. Community organization is the focus of the tuberculosis association's program.

FIRST HUMAN RABIES DEATH IN IOWA SINCE 1944

Laboratory reports have confirmed the diagnosis of a human death from rabies in Iowa in June of this year. This case, a six-year old Des Moines boy, is the first Iowa case since 1944 when the disease caused the death of a 79 year old man in Muscatine County.

The Des Moines boy was hospitalized on the third day of illness with a history of fever, earache, muscular pains and weakness and difficulty in swallowing. He soon developed delirium and inability to walk or to talk coherently. Upon admission to the hospital he was found to have rigidity of the legs and neck and moderate rigidity of the spine. His eyes did not appear to focus properly and choking spasms occurred when he was given fluids. His condition became progressively worse and he died on the twelfth day of illness.

Since a definite diagnosis had not been made, post mortem examination was carried out. This examination offered no evidence to ascertain the specific cause or type of encephalitis. For that reason tissue was submitted to other pathologists for further study. The final report, received about ten days ago from the Armed Forces Institute of Pathology in Washington, D. C., was that death was due to Rabies Encephalitis.

No history can be obtained of any contact of the boy with a rabid animal. The nearest approach to a definite contact is a visit in June, 1950 to a home where a dog was chained, under observation for rabies. Because this dog was a rabies suspect (subsequently proven to have been infected with rabies), special care was taken to see that no one had any exposure to infection from the animal.

As the incidence of rabies in animals increases the chances that people will be unknowingly exposed to rabies are increased correspondingly. This is particularly true in small children who cannot give an accurate story or history of exposure, as was probably the case here in Des Moines.

In 1949 ten human deaths were reported in the United States and in 1950 21 deaths occurred.

State	Animal Cases		Human Deaths	
	1949	1950	1949	1950
Illinois	177	222	2	
Indiana	827	634		4
Kentucky	1022	845	2	1
Tennessee	397	284		6
Texas	998	1219		1
West Virginia	245	269	1	2
Iowa	252	373		

These are among the states with the highest number of animal rabies cases reported in the United States.

This is one of the particular reasons why it is necessary that all dogs in Iowa be vaccinated annually against rabies. With the high incidence of the infection in our wild animals, our best protection is to make the dog a barrier between us and possible infection from the wild animal reservoir.

CARBON MONOXIDE HAZARDS INCREASE IN COLD WEATHER

The approaching winter season will bring an increase in the dangers of carbon monoxide poisoning, and precautions must be followed in the home, in the car, and in the factory.

Carbon monoxide is a colorless, tasteless, odorless gas produced by incomplete burning of fuel, and is a deadly poison when breathed in sufficient quantities. This gas, when breathed, causes internal suffocation by combining with the hemoglobin of the blood to prevent it from carrying oxygen to the tissues. Sufficient amounts of carbon monoxide will produce headaches, loss of efficiency, dizziness, nausea, and collapse.

Improper ventilation practices have been found responsible for most of the monoxide poisonings. In the home, the heating and stove installations should be checked for proper burner adjustment, clogged chimneys, improper venting, pilot light adjustments, poor damper operation, poorly fitted pipes, and worn and corroded parts. Since all these can permit dangerous amounts of gas to accumulate in the living areas, the necessary corrections should be made.

Carbon monoxide is the chief toxic component, and is always present, in automobile exhaust gas. A car, truck, or tractor should never be allowed to run in a closed garage or building. The exhaust system should be checked for leaks in manifold, hot air heater, and muffler connections. All drivers should keep a window partly open while a car or truck motor is operating.

In industrial establishments, all gas and oil burners should be checked for leaks, proper venting, and adjustment for proper combustion. No gasoline-powered trucks should be operated inside the plant without providing adequate ventilation in the area.

Ventilation is the basic protective measure against carbon monoxide. Whenever the presence of this gas is suspected, doors and windows should

(Continued on page 521)

Iowa Academy of General Practice

President—Cecil V. Hamilton, M.D., 145 E. 4th St., Garner

President-Elect—Joseph G. Fellows, M.D., 405½ Douglas Ave., Ames

Vice President—Ivan T. Schultz, M.D., 106 N. Taft St., Humbolt

Secretary-Treasurer—William M. Sproul, M.D., 912 Equitable Bldg., Des Moines

ANNOUNCEMENT

POSTGRADUATE COURSE

IN

GERIATRICS

January 24, 1951

Hotel Savery, Des Moines

Speakers

Wingate M. Johnson, M.D., Winston Salem, N. C.
Professor of Clinical Medicine
Bowman-Gray School of Medicine,
Wake Forest College

Walter C. Alvarez, M.D., Chicago, Ill.
Professor of Internal Medicine,
University of Minnesota
Formerly of Mayo Clinic, Rochester, Minn.
Associate Editor of *GP*

Watch for details in the January Journal

OUR POSTGRADUATE MEETINGS

Many complimentary remarks have come to our attention regarding our September sixth meeting. These words were backed by deeds and a good number of practitioners, seeing us in action, thought well enough of us to apply for membership in our Academy. We are gratified to see this concrete proof that the postgraduate meetings put on by the Iowa Academy have real substance.

A NEW DAY FOR THE G.P.

We are no longer seeing the patients we used to see but we are seeing many others in their places. With the virtual conquest of infectious diseases, an increasing amount of the physician's time is given to the care of middle aged and elderly patients suffering from the so-called degenerative diseases, such as arthritis and arterio-

sclerosis. Even more important has been the increasing awareness that a large group of diseases which were formerly thought organic are actually caused wholly or partly by emotional disturbances. Peptic ulcer, hypertension, colitis, and asthma are only a few of these. There is also evidence that such psychosomatic diseases are increasing. Such a change in the buyer of health demands one in the seller. New illnesses require new medicine. The practitioner of the future will be successful only if he sees the patient as a whole and as an individual.

Recently, Dr. Karl Menninger urged a meeting of the American College of Physicians to recognize the diagnostic labels we use for what they are—loose, descriptive terms only. Dr. Menninger asked the doctors, "What is the diagnosis in a patient who has coronary symptoms whenever he takes his wife to a party, or in a woman who has migraine on the week ends her son is home from college? What kind of arthritis is it which becomes activated with each quarterly meeting of the board of directors? If a child vomits each morning just before school time, or if a man reared in a home where a drunken father regularly beat his family, faints when he goes to his employer's office—if these patients come to see us as they do every day in the world, what shall we say the disease is in each case?" And he answered, in part, "In theory there cannot be any such thing as a simple, uncomplicated diagnosis of anything, not even measles. The child with measles has at the same time some educational interruptions, and some social complications, and some disturbed relationships with parents and brothers and sisters."

Who then shall see all these people with their problems which are as much a part of their diseases as the parts to which we apply our diagnostic tags? Who but the man who has already done so throughout generations? For this new medicine we need is that practiced by the old-time family doctor. He practiced it because, before our modern miracle drugs, it was the best he had, and now it turns out to be the best we have. But we need more of it today, and with the increase in specialism we have fewer doctors offering it. Excerpts from *GP*, August, 1951.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

CLINICAL ALLERGY, by *Samuel J. Taub, M.D., F.A.C.P.*, Professor of Medicine and Chairman of Department of Allergic Diseases, Chicago Medical School; Professor of Medicine, Cook County Graduate School; Attending Physician, Cook County, Columbus and Mt. Sinai Hospitals. Paul B. Hoeber, Inc., New York, 1951. Price \$4.50.

DIAGNOSIS AND TREATMENT OF MENSTRUAL DISORDERS AND STERILITY (3rd edition), by *Charles Mazer, M.D., F.A.C.S.*, Formerly Associate Professor of Gynecology and Obstetrics, Graduate School of Medicine, University of Pennsylvania; Attending Gynecologist, St. Agnes Hospital; Consulting Gynecologist, Mt. Sinai Hospital, Philadelphia; and *S. Leon Israel, M.D.*, Assistant Professor of Gynecology and Obstetrics, Graduate School of Medicine, University of Pennsylvania; Attending Gynecologist, Mt. Sinai Hospital, Philadelphia. Paul B. Hoeber, Inc., New York, 1951. Price \$10.00.

PHYSICAL MEDICINE AND REHABILITATION FOR THE CLINICIAN, Edited by *Frank H. Krusen, M.D.* W. B. Saunders Company, Philadelphia, 1951. Price \$6.50.

THE SPECIALTIES IN GENERAL PRACTICE, by *Russell L. Cecil, M.D.*, Professor of Clinical Medicine, Emeritus, Cornell University Medical College, New York. W. B. Saunders Company, Philadelphia, 1951. Price \$14.50.

SURGICAL PRACTICE OF THE LAHEY CLINIC, by members of the Staff of Lahey Clinic, Boston. W. B. Saunders Company, Philadelphia, 1951. Price \$15.00.

YOUR DIABETES—A Manual for the Patient, by *Herbert Pollack, M.D.*, Associate Physician for Metabolic Diseases, Mt. Sinai Hospital, New York, and *Marie V. Krause, M.S.*, Consulting Dietician. Paul B. Hoeber, Inc., New York, 1951. Price \$3.00.

BOOK REVIEWS

AN ATLAS OF NORMAL RADIOGRAPHIC ANATOMY by *Isadore Meschan, M.D.* (W. B. Saunders Co., Philadelphia, \$15.00).

This is an excellent new book to appear on the scene; one of the few on normal radiographic anatomy. It is considered an excellent text because of the brief full description of radiographic anatomical parts, all of which are illustrated with the X-rays films, sketches of the positioning of the patient, and a sketch of the anatomical parts drawn from the film. For this reason, it makes it very adaptable to both the radiologist and general practitioner. The section on normal radiographic anatomy of the central nervous system is especially good, giving not only routine procedures for diagnosis but also special. This should be on the shelf of the library of every radiologist.—*Noble W. Irving, M.D.*

PARACELSUS, MAGIC INTO SCIENCE, by *Henry M. Pachter* (Henry Schuman, Inc., New York, \$4.00).

This volume is difficult to read and evaluate. At times, it is hard to understand and is somewhat dull, but the subject material, when taken as a whole, is moderately interesting.

The subject of this dissertation is an interesting character. He traveled far and wide. He reminds one of the physician who is continually on the move and

does not establish himself in one community. After winning the hearts of his clientele, he would proceed to get himself into one imbroglio after another.

The author shows that Paracelsus brought out many fundamentals of therapeutics still in use. Although he demonstrated the true value of drugs, he allowed himself to drift into the occult in medicine and dwelt at length upon it. The physicians of his time were not too loyal to him, for he never took time or cared to become a physician. Thus, he was frequently at odds with fellow practicing physicians.

This volume should be on the shelf of every man who is interested in this character and among the files of large libraries as a reference book.—*C. B. Luginbuhl, M.D.*

STATISTICS FOR MEDICAL STUDENTS AND INVESTIGATORS IN THE CLINICAL AND BIOLOGICAL SCIENCES, by *Frederick J. Moore, M.D.*, *Frank B. Cramer, M.D.*, and *Robert G. Knowles, M.D.* (The Blakiston Co., Philadelphia, \$3.25).

This book has been prepared for investigators and medical students in order to reduce to pure science the presentation of medical data. It is most profound and replete. Arithmetical formulae numerical tables are given in an appendix for ready reference. Any author who plans to use statistics would do well to refer to this volume in the home for better accuracy in presenting medical facts.—*E. M. George, M.D.*

THE URGE OF MAN, by *Thomas J. Burns, M.D.* (Sold through the Phillip Drug Store, Manchester, Iowa, \$2.50).

One of the retired physicians of Iowa has traced mankind from his origin to the end of the world. This vitally interesting subject has been handled succinctly according to the author's ideas. It is unfortunate that lack of proof reading detracts from the volume. Many physicians will find the book of intriguing interest.—*E. M. George, M.D.*

MATERNITY BENEFITS UNDER BLUE CROSS-BLUE SHIELD ARE LIBERALIZED

Effective as of November 1, 1951, any new Family Contract (for which application is made within 30 days of the date of marriage and payment made) shall be effective on the monthly effective date of the subscriber's contract *immediately prior to the date of marriage*. Since maternity coverage, including illnesses of pregnancy, is available *only* after a Family Contract has been in force nine months, this new policy offers added protection to subscribers. The effective date of the Family Contract is used in computing the nine month's waiting period, and by making the effective date prior to the marriage, the subscriber attains complete coverage in a shorter period of time.

SOCIETY PROCEEDINGS

MEETINGS

Black Hawk

The regular meeting of the Black Hawk County Medical Society was held November 19 at the Elks Club in Waterloo. Dr. Alson E. Braley, Head of the Department of Ophthalmology at the SUI College of Medicine, spoke on "The Responsibility of the General Practitioner in the Glaucoma Problem."

Cerro Gordo

The Cerro Gordo County Medical Society held its annual complimentary dinner meeting October 9 at the Hotel Hanford in Mason City. Dr. Carroll B. Larson, Head of the Department of Orthopedics at the SUI College of Medicine, spoke on "Arthritis from an Orthopedic Standpoint."

Greene

Members of the Greene County Medical Society and their wives entertained the members of the Greene County Dental Society and their wives at a dinner October 25 at the Woman's Clubhouse in Jefferson.

Iowa Academy of Ophthalmology and Otolaryngology

The annual convention of the Iowa Academy of Ophthalmology and Otolaryngology was held November 2 at the University Hospitals in Iowa City. Dr. Francis Lederer of the University of Illinois and Dr. Dean M. Lierle, Head of the SUI Otolaryngology Department were the morning session speakers. Dr. Alson E. Braley, Head of the SUI Department of Ophthalmology, presented new methods of treating eye diseases; Dr. George C. Albright and Dr. Adolph L. Sahs, Head of the Neurology Department, discussed phases of embryology and anatomy; Dr. Russell Meyers, Head of the Neurosurgical Department, discussed the diagnosis and treatment of eye disorders.

Iowa Speech and Hearing Association

Dr. Raymond R. Rembolt, Director of State Services for Crippled Children at SUI College of Medicine and Dr. Orivus C. Irwin, SUI Professor of Child Welfare, delivered the principal speeches November 10 at the semi-annual meeting of the Iowa Speech and Hearing Association in Iowa City.

Linn

Dr. Willard O. Thompson, Chicago, Clinical Professor of Medicine at the University of Illinois,

spoke on "Uses and Misuses of Sex Hormones" at a meeting of the Linn County Medical Society November 8 at the Montrose Hotel in Cedar Rapids.

Page

Dr. Wilbur Muehlig, Omaha, Nebr., held a lecture and demonstration clinic of 18 brain operations he performed on patients at the Clarinda Mental Health Institute at a meeting of the Page County Medical Society on November 8.

Scott

Dr. Preston E. Gibson, Davenport, was elected President of the Scott County Medical Society at the November 6 meeting of the Society. Other officers chosen include: president-elect, Dr. James F. Bishop; vice-president, Dr. Augustus B. Kuhl, Jr.; secretary, Dr. Harry B. Weinberg, and treasurer, Dr. F. Dale Wilson, all of Davenport.

Washington

Members of the Washington County Medical Society entertained their wives and other guests at a turkey dinner October 25 at the Legion Hall in Wellman. Dr. Donald C. Conzett, Dubuque, President of the State Medical Society, spoke. Mr. Christopher Dumbell, London, England, spoke on "Socialization in England."

Woodbury

The regular meeting of the Woodbury County Medical Society was held November 15 at the Mayfair Hotel in Sioux City. Dr. William E. Wellman, Mayo Clinic, Rochester, Minn., spoke on "The Current Trends in Antibiotic Therapy."

PERSONALS

Dr. Cornelius P. Addison, formerly of Sioux Falls, S. D., has begun the practice of general surgery in Fort Dodge. A 1943 graduate of the Creighton University School of Medicine, Omaha, Nebr., Dr. Addison interned at St. Mary's Hospital in San Francisco, Calif., and spent his residency at the Veterans Hospital, Des Moines and the University Hospitals, Iowa City.

Dr. Reu L. Barnett, Atlantic physician, retired November 1 after nearly 45 years of practicing medicine.

Dr. James B. Blair, formerly of Fargo, N. D., has begun the practice of medicine in Cherokee with **Dr. Harmon D. Seely**. A 1939 graduate of the University of Nebraska Medical School, Lincoln, Dr. Blair interned at the University of Nebraska and the University of Minnesota.

Dr. Jack S. Crandall has begun the practice of medicine in Marshalltown. He is specializing in pediatrics and obstetrics in addition to general medicine. Dr. Crandall was graduated from the SUI College of Medicine in 1947 and spent his residency in South Bend, Ind.

Dr. Wendell L. Downing, LeMars, discussed health problems at the annual banquet of the Carroll County Health Council November 13 at Hotel Burke in Carroll.

Dr. Andrew L. Hoenig, formerly of Mancelona, Mich., has begun his duties as staff physician at the Cherokee Mental Health Institute. A graduate of the Royal Hungarian University, Dr. Hoenig practiced medicine in Michigan for 30 years.

Dr. Lewis E. January, Associate Professor of Internal Medicine at the SUI College of Medicine, recently was elected to the six-man Council of the Central Society for Clinical Research.

Dr. Don J. McDonald has begun the practice of medicine in Cedar Rapids. A native of Cedar Rapids, Dr. McDonald was graduated from the SUI College of Medicine in 1933.

Dr. George McMillan, formerly of Rochester, N. Y., has become associated with **Dr. Frank Lyman** in general practice and surgery in Fort Madison. Dr. McMillan was graduated from the Long Island College of Medicine in 1942 and served his internship and residency at the General Hospital in Buffalo, N. Y.

Dr. Charles H. Merrill, who has practiced medicine in Oskaloosa for the past 25 years where he specialized in eye, ear, nose and throat diseases, has retired and recently sold his practice to **Dr. George S. Atkinson**. Dr. Merrill will make his home in Kennebuckport, Me.

Dr. Elmer M. Smith, Eagle Grove, has announced that **Dr. George B. Hogenson**, his associate, has become a full partner as of October 1.

Dr. Paul Stephen, formerly of Manchester, has begun the practice of medicine in Cedar Rapids.

Nine Iowans were admitted to fellowship in the American College of Surgeons during the annual meeting in San Francisco. They include: **Dr. John T. Bakody**, Des Moines; **Dr. Vernon B. Blaha**, Marshalltown; **Dr. Ambrose J. Calaghan, Jr.**, Sioux City; **Dr. George H. Clark** and **Dr. Howard C. Bos**, Oskaloosa; **Dr. John P. Cogley**, Council Bluffs; **Dr. William C. Kettel**, **Dr. Carroll B. Larson** and **Dr. John H. Randall**, all of Iowa City.

Dr. Harold E. White, after 33 years of practicing medicine in Knoxville, has accepted a position as an anesthetist at Veterans General Hospital in Prescott, Ariz.

MARRIAGE ANNOUNCEMENT

Miss Suzanne Jacobs, daughter of Mrs. Max W. Jacobs of University City, Mo. and **Dr. Milton S. Mark**, son of Mr. and Mrs. Myron Mark of Des Moines, were married November 5 in St. Louis, Mo.

DEATH NOTICES

Dr. Theodore Lincoln Chadbourne, 81, retired Vinton physician, died at his home in Vinton October 17 of heart failure. He had been a semi-invalid for quite some time with a heart ailment. Dr. Chadbourne was a 1894 graduate of the University of Michigan Medical School, Ann Arbor, Mich. He was a life member of the Benton County and Iowa State Medical Societies.

Dr. Erwin Schenk, 80, Des Moines physician for 50 years, died of Parkinson's Disease, November 14 at the Iowa Methodist Hospital after an illness of two months. Born near Waterloo, Dr. Schenk was graduated from the New York Medical College in 1900 and took post-graduate work at Berlin University, Germany. Dr. Schenk was a life member of the Polk County and Iowa State Medical Societies.

Dr. Herbert R. Sugg, 77, Clinton physician for more than 50 years, died October 22 after a three year illness. Born in Preston, he was graduated from the Rush Medical School, Chicago in 1896 and at the time of his death was a life member of the Clinton County and Iowa State Medical Societies.

ROSTER OF IOWA PHYSICIANS IN MILITARY SERVICE

As of November 15, 1951

Ackerman, J. H., Clarksville
(Melbourne, Fla.).....Asst. Surg., U.S.P.H.S.
Alberts, M. E., Des Moines
(Des Moines).....Lt., U.S.N.R.
Ashby, J. D., Davenport
(Battle Creek, Mich.).....Major, A.U.S.

Bartholomew, R. D., Lake City
(Oakland, Calif.).....Lt. (jg), U.S.N.R.

Bartley, R. L., Sully
(FPO San Francisco, Calif.).....Lt., U.S.N.R.

Benge, D. K., Dows
(Ft. Leonard Wood, Mo.).....1st. Lt., U.S.A.

Braatelian, N. T., Des Moines
(Camp Carson, Colo.).....1st. Lt., U.S.A.F.

Brown, R. C., Mason City
(Kansas City, Kan.).....1st. Lt., A.U.S.

Camp, J. R., Thompson
(San Diego, Calif.).....Lt. (jg), U.S.N.R.

Carroll, T. J., Sibley
(APO San Francisco, Calif.)1st. Lt., U.S.A.F.

Carson, R. W., Winterset
(APO San Francisco, Calif.).....1st. Lt., A.U.S.

Coyne, K. M., Burlington
(FPO San Francisco, Calif.).....Cmdr., U.S.N.R.

Dalager, R. D., Ottumwa
(Annapolis, Md.)U.S.N.R.

Davidson, M. C.
(APO New York, N. Y.).....Lt. Col., A.U.S.

Davis, S. K., Des Moines
(Seattle, Wash.).....

Donahue, J. F., Fort Dodge
(San Antonio, Texas).....U.S.A.F.

Fitch, R. E., Des Moines
(Bangor, Me.).....1st. Lt., U.S.A.F.

From, Paul, West Des Moines
(San Antonio, Texas).....1st. Lt., U.S.A.F.

Gladstone, W. S., Jr., Iowa City
(Crestview, Fla.).....U.S.A.F.

Goenne, W. C., Jr., Davenport
(Tacoma, Wash.).....Major, A.U.S.

Gustafson, J. E., Des Moines
(Camp Roberts, Calif.).....1st. Lt., A.U.S.

Jensen, K. V., Newton
(San Antonio, Texas).....1st. Lt., U.S.A.F.

Johnson, A. A., Jr., Council Bluffs
(Ft. Worth, Texas).....1st. Lt., U.S.A.F.

Johnson, F. N., Madrid
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STATE DEPARTMENT OF HEALTH

(Continued from page 516)

be opened to permit complete air circulation. Any person overcome by carbon monoxide should be moved to fresh air and given artificial respiration until a physician arrives.

The toll of injuries and deaths taken by carbon monoxide can be reduced by careful observation of these precautions before and during the coming winter season.

MORBIDITY REPORT

Disease	Oct. 1951	Sept. 1951	Oct. 1950	Most Cases Reported From These Counties:
Diphtheria	1	3	3	Winneshieki
Scarlet Fever	29	15	15	Black Hawk, Polk, Sac, Scott
Typhoid Fever	2	15	0	Appanoose, Fayette
Smallpox	0	0	0	.....
Measles	14	13	5	Benton, Dubuque, Mills
Whooping Cough	18	40	140	Des Moines, Jones
Brucellosis	41	55	18	6 counties, 2 cases each other cases in scattered areas 1 case to a county.
Chickenpox	65	28	10	Black Hawk, Boone, Linn, Woodbury
Meningitis men.	8	1	2	Scattered
Mumps	55	59	22	Cass, Clinton, Des Moines, Linn
Pneumonia	6	11	4	Scattered
Poliomyelitis	41	159	473	(Corrected figure) Crawford, Fayette, Polk, Winnebago
Rabies in Animals	19	12	54	Greene (2), Polk (4), others scattered, 1 to a county.
Rabies in Man	1	0	0	Polk
Tuberculosis	52	78	104	For the State
Gonorrhea	42	68	76	For the State
Syphilis	141	144	221	For the State

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INDEX

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1951



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A

Abdomen, Traumatic, The
J. Philip Cogley, M.D., Council Bluffs.....451

Abolition of Fireworks.....467

Accidents, Cornpicker, of the Lower Extremity
Carroll O. Adams, M.D., Mason City.....454

Acute Cholecystitis in the Aged
Wade O. Preece, M. D., Waterloo.....485

Address at the Convocation of the College of Medicine,
State University of Iowa
Mark F. Boyd, M.D., Tallahassee, Fla.....360

Adolescent, Metabolic and Nutritional Studies in the
Joseph A. Johnston, M.D., Detroit, Mich.....79

Advertisers in Hand Program.....156

Aged Population in Iowa, Longevity Studies, Length of
Life
Raphael Ginzberg, M.D. and
Willard C. Brinegar, M.D., Cherokee.....174

Alcoholism, Use of Conditioned Reflex and Antabuse in
the Therapy of
William E. Ash, M.D., and
James D. Mahoney, M.D., Council Bluffs.....456

Alpha Omega Alpha Initiates.....238

American Cancer Society.....155

American Medical Education Foundation.....153

AMA Gives Half Million for Medical Education.....24

AMA Meeting.....232

American Medical Women's Association Meeting.....238

American Red Cross.....98

Ankle, Serious Fractures
Robert M. Wray, M.D., Cedar Rapids.....383

Antabuse, Use of and Conditioned Reflex in Therapy
of Alcoholism
William E. Ash, M.D., and
James D. Mahoney, M.D., Council Bluffs.....456

Anti-epileptic Drugs, A Brief Survey of the
Pharmacology of
Fred W. Schueler and
Robert M. Featherstone, Iowa City.....125

Aorta, Dissecting Aneurysm of the
Howard J. Hartman, M.D., and
Herbert Shulman, M.D., Waterloo.....172

Art of Medical Writing.....505

Atom Warfare Nursing Courses.....162

Authors—
Adams, Carroll O.....454
Ady, Albert E.....188
Allen, Willard M.....209
Alter, Most Rev. Karl J.....431
Ash, William E.....456
Bakody, John T.....419
Barnes, Bernard C.....43
Berney, Paul W.....182
Bishop, James F.....6
Boyd, Mark F.....360
Brennan, James E.....215
Brinegar, Willard C.....174
Carpenter, Ralph C.....353
Carr, T. Lyle.....388
Cogley, J. Philip.....451
Cole, Richard L.....16
Conzett, Donald C.....169
Cosgrove, Samuel A.....1
Dean, Abbott M.....459
Decker, Henry G.....215
Derauf, Donald E.....423
Derfield, Randall S.....16
Dolehide, Eugene F.....481
Donnellv. Madelene M.....252
Down, Howard I.....488
Downing, John S.....220
Dulin, John W.....188
Ehrenhaft, Johann L.....136
Featherstone, Robert M.....125
Fowler, Willis M.....84
Franklin, Murray.....416
Galloway, Thomas C.....341
Gamble, Clarence J.....218
Gardner, Harold O.....491
Ginzberg, Raphael.....174
Graham, Walter C.....381
Gustafson, John E.....349
Hartman, Howard J.....172
Hendricks, Atlee B.....84
Ingram, Walter R.....114
January, Lewis E.....88
Johnston, Joseph A.....79
Keil, Philip G.....48
Kelsey, James E.....423
Kinsella, Thomas J.....37
Knott, John R.....120
Landis, Sylvanus N.....48
Lull, George F.....502
MacQueen, John C.....111
Mahoney, James D.....456
Margulies, Harold.....349
Merkel, Byron M.....346
Meyers, Russell.....128
Miller, Norman F.....245

Miller, Wilbur R.....392

Neu, Harold N.....413

Noe, Carl A.....86

Olson, Stanley W.....185

Perret, George.....7

Preece, Wade O.....485

Randall, John H.....248

Randall, Ross C.....257

Reedy, William J.....413

River, Louis P.....481

Schueler, Fred W.....125

Seifert, Martin H.....341

Shulman, Herbert.....172

Silverstein, Joseph.....481

Stein, Robert J.....248

Stuermer, Virginia M.....248

Theilen, Ernest O.....88

Thornton, Thomas F.....169

Ward, L. Emmerson.....447

Waugh, William F.....50

Wray, Robert M.....383

Auxiliary News.
Woman's...30, 62, 102, 159, 200, 235, 332, 371, 403, 438, 469, 512

Auxiliary, Woman's, Program, Twenty-Second
Annual Meeting.....101

B

Baldrige-Beye Memorial Loan Fund.....58

Bookshelf.
The Journal.....33, 67, 105, 163, 203, 241, 337, 377, 409, 443, 475, 518

Bowel, Small Obstruction
Bernard C. Barnes, M.D., Des Moines.....43

Braley, Alson E.....110

Breast, Carcinoma of, Symptoms and Diagnosis
Louis P. River, M.D., Oak Park, Ill., Joseph
Silverstein, M.D., Chicago, Ill., and
Eugene F. Dolehide, M.D., Chicago, Ill.....481

Brief Survey of the Pharmacology of
Anti-Epileptic Drugs
Fred W. Schueler and
Robert M. Featherstone, Iowa City.....125

Bulbar Poliomyelitis, Lowering Mortality from
Thomas C. Galloway, M.D., Evanston, Ill., and
Martin H. Seifert, M.D., Wilmette, Ill.....341

C

Can the Cost of Medical Care Be Lessened?.....269

Cancer Educational Campaign.....23

Cancer, Primary of the Lung
Thomas J. Kinsella, M.D., Minneapolis, Minn.....37

Cancer Research.....364

Carcinoma of the Breast, Symptoms and Diagnosis
Louis P. River, M.D., Oak Park, Ill., Joseph
Silverstein, M.D., Chicago, Ill., and
Eugene F. Dolehide, M.D., Chicago, Ill.....481

Cervicobrachial Pain, Diagnostic and Therapeutic
Considerations in
George Perret, M.D., Iowa City.....7

Cesarean Sections in Iowa in 1949
Madelene M. Donnelly, M.D., Des Moines, Iowa.....252

Chest, Surgical Lesions in Children
Johann L. Ehrenhaft, M.D., Iowa City.....136

Children, Medical Care of, with Paroxysmal
Convulsive Disorders
John C. MacQueen, M.D., Iowa City.....111

Children, Surgical Lesions of the Chest in
Johann L. Ehrenhaft, M.D., Iowa City.....136

Cholecystitis in the Aged, Acute
Wade O. Preece, M. D., Waterloo.....485

Cites Dangers of Socialized Medicine
Most Rev. Karl J. Alter, Archbishop, Cincinnati, O.....431

Citizens' Conference on Children and Youth.....433

Civil Defense.....196

College of Medicine Symposium on Convulsive Disorders 111

College of Medicine, Cliniconathologic
Conference.....18, 52, 91, 149, 191, 224, 426, 460, 495

Come to the Annual Meeting.....153

Committee Meeting.....407

Community Chest.....434

Complications of ACTH Therapy.....506

Congenital Dermoid Cysts of the Nasal Dorsum
Ross C. Randall, M.D., Waterloo.....257

Cortisone, Use of in Rheumatic Diseases
L. Emmerson Ward, M.D., Rochester, Minn.....447

Cornpicker Accidents of the Upper Extremity
Carroll O. Adams, M.D., Mason City.....454

Conjunctival Sac, Physiology of
Abbott M. Dean, M.D., Council Bluffs, Iowa.....459

County Medical Society Officers.....xxx, xxiv, 322, 446

County Meetings 35, 69, 107, 165, 205, 243, 339, 379, 411, 477

Course in Child Psychiatry.....433

D

Death Notices 36, 70, 108, 166, 205, 243, 340, 379, 412, 446, 478

Dermoid Cysts, Congenital of the Nasal Dorsum
Ross C. Randall, M.D., Waterloo.....257

Diabetes Mellitus, Problems in the Management of	
T. Lyle Carr, M.D., Iowa City.....	388
Diabetes Week.....	471
Diagnosis and Management of Chronic Peripheral Arterial Insufficiency	
Harold N. Neu, M.D., and	
William J. Reedy, M.D., Omaha, Neb.....	413
Diagnosis and Surgical Treatment of Posterior Wall Duodenal Ulcer	
Howard I. Down, M.D., Sioux City.....	488
Diagnostic and Therapeutic Considerations in Cervicobrachial Pain	
George Perret, M.D., Iowa City.....	7
Dicumarol Can Be Dangerous.....	97
Discussion of the Neurological Basis for Seizures	
Walter R. Ingram, M.D., Iowa City.....	114
Dissecting Aneurysm of the Aorta	
Howard J. Hartman, M.D., and	
Herbert Shulman, M.D., Waterloo.....	172
Doctor, Do You Have a Hobby?.....	59
Do You Want an Assistant?.....	402

E

Electrocardiographic Changes in Acute Poliomyelitis	
John E. Gustafson, M.D., and	
Harold Margulies, M.D., Des Moines.....	349
Electroencephalography in the Evaluation of Epilepsy: Some Applications and Limiting Conditions	
John R. Knott, M.D., Iowa City.....	120
Endocrinology, Gynecologic in General Practice	
Willard M. Allen, M.D., St. Louis, Mo.....	209
Easter Seals.....	96
Employment of the Handicapped.....	435
Enteral Protein Hydrolysates.....	154
Evaluation of the Electrocardiogram in Diagnosis and Prognosis, the.....	434
Editorials—	
Abolition of Fireworks.....	467
American Cancer Society.....	155
AMA Gives Half Million for Medical Education.....	24
AMA Meeting.....	232
American Medical Education Foundation.....	153
American Red Cross.....	98
Art of Medical Writing.....	505
Awards Given at Annual Meeting.....	231
Baldridge-Beye Memorial Loan Fund.....	58
Can the Cost of Medical Care Be Lessened?.....	269
Cancer Educational Campaign.....	23
Cancer Research.....	364
Civil Defense.....	196
Come to the Annual Meeting.....	153
Community Chest.....	434
Complications of ACTH Therapy.....	506
Diabetes Week.....	471
Dicumarol Can Be Dangerous.....	97
Do You Want an Assistant?.....	402
Easter Seals.....	96
Employment of the Handicapped.....	435
Enteral Protein Hydrolysates.....	154
Evaluation of the Electrocardiogram in Diagnosis and Prognosis, the.....	434
Exhibit Space at Annual Meeting All Sold.....	506
Fracture Service at Iowa City.....	24
Have You Contributed to the Medical Education Fund?.....	402
Honor Roll of Technical Exhibitors.....	434
Hundredth Meeting, the.....	230
Is Time Running Out for the Bureaucrats?.....	466
Jet Injection of Drugs.....	230
Justification of the Small Rural Hospital.....	232
Labor Leader Denounces Socialized Medicine.....	25
Laboratory Diagnosis of Tuberculosis.....	467
Long Term Objectives—AMA and State Society.....	267
Lymph Node Biopsy.....	25
Management of Perforated Peptic Ulcer.....	57
Medical Culture.....	197
Misleading Statement by AAPS.....	269
Mr. Ewing Again.....	364
North Central Conference.....	506
Official Issue.....	267
Our Grievance Committee Is Functioning.....	97
Our Responsibility to the Fifty-Fourth General Assembly.....	57
Poliomyelitis in 1951.....	401
Problems of Pneumonia.....	197
Progress Report on Nurses' Survey.....	98
Protect Blue Cross and Blue Shield.....	365
Public Law No. 791.....	25
Recent Actions of the Council.....	155
Reimplantation of Teeth.....	268
Required Post-Graduate Work or Periodic Re-examination.....	57
"Second Look".....	196
Sudden Cardiac Arrest.....	401
University of Iowa Issue.....	153
Use of Isotopes.....	365
Vocational Rehabilitation.....	401
What Does the Training of Additional Medical Students Entail?.....	96

What Should Your Journal Mean to You?.....	505
You and Your AMA.....	364
1951 Ahead.....	23
Epilepsy, Electroencephalography in the Evaluation of, Some Applications and Limiting Conditions	
John K. Knott, M.D., Iowa City.....	120
"Epilepsy," Neurosurgical Measures in the Management of	
Russell Meyers, M.D., Iowa City.....	128
Exhibit Space at Annual Meeting All Sold.....	506

F

Fifty Year Club Members.....	319
Folic Acid Antagonists in the Treatment of Leukemia	
Atlee B. Hendricks, M.D., Davenport, and	
Willis M. Fowler, M.D., Iowa City.....	84
Fractures, Serious Ankle	
Robert M. Wray, M.D., Cedar Rapids.....	383
Fracture Service at Iowa City.....	24
From Leeches to Anti-Biotics	
George F. Lull, M.D., Chicago, Ill.....	502

G

General Manager's Page.....	510
Gynecologic Endocrinology in General Practice	
Willard M. Allen, M.D., St. Louis, Mo.....	209
General Practice, Iowa Academy of.....	376, 408, 442, 474, 517

H

Hand, Severe Injuries to the	
Walter C. Graham, M.D., Santa Barbara, Calif.....	381
Have You Contributed to the Medical Educational Fund? 402	
Health, State Department of	
.....31, 64, 103, 161, 201, 239, 334, 374, 405, 440, 472, 515	
Hepatic Function Tests, Use and Misuse of	
Murray Franklin, M.D., Iowa City.....	416
Highlights of the Meeting of the House of Delegates of the American Medical Association.....	58
Histoplasmin in Iowa, Skin Sensitivity to	
Randall S. Derifield, M.D., Saginaw, Mich., and	
Richard L. Cole, M.D., Grand Junction, Colo.....	16
Honor Roll of Technical Exhibitors.....	434
Hotel Room Reservations.....	120
Hundredth Meeting.....	230
Hypertrophic Pyloric Stenosis: A Case Report	
John W. Dulin, M.D., Iowa City and	
Albert E. Ady, M.D., West Liberty.....	188

I

Incidence of Toxoplasmosis Among Pregnant Women in Iowa	
Virginia M. Stuermer, M.D., Robert J. Stein, M.D., and John H. Randall, M.D., Iowa City.....	248
Index, 1951, Nos. 1-12.....	522
Internal Revenue Office Ruling on Assistant's Fees.....	508
International College of Surgeons Meeting.....	400
Interstitial Myocarditis in Infancy; Report of a Case	
John S. Downing, M.D., Cedar Rapids.....	220
Intervertebral Discs, A Review of Fifty Operated Cases of Protruded or Ruptured in the Lumbar Area	
Henry G. Decker, M.D., and James E. Brennan, M.D., Des Moines.....	215
Iowa Academy of General Practice.....	376, 408, 442, 474, 517
Iowa Medical Service Meeting.....	166
Iowa Methodist Hospital Clinicopathologic Conference.....	396
Iowa State Medical Society Officers and Committees, 1951-1952.....	320, 527
Iowa Trudeau Society Meeting.....	419
Is Time Running Out for the Bureaucrats?.....	466

J

Jet Injection of Drugs.....	230
Journal Book	
Shelf.....33, 67, 105, 163, 203, 241, 337, 377, 409, 443, 475, 518	
July Journal.....	233
Justification of the Small Rural Hospital.....	232

L

Labor Leader Denounces Socialized Medicine.....	25
Labor, Prolonged	
William F. Mengert, M.D., Dallas, Texas.....	1
Laboratory Diagnosis of Tuberculosis.....	467
Lacrimal Duct Obstruction, Management of	
Carl A. Noe, M.D., Cedar Rapids.....	86
Larson, Carroll B., M.D.....	110
Leukemia, Folic Acid Antagonists in the Treatment of	
Atlee B. Hendricks, M.D., Davenport and	
Willis M. Fowler, M.D., Iowa City.....	84
Licenses, Medical.....	135, 238, 369, 465
Longevity Studies, Length of Life and the Aged Population in Iowa	
Raphael Ginsberg, M. D., and	
Willard C. Brinegar, M.D., Cherokee.....	174
Long Term Objectives—AMA and State Society.....	267

Lowering Mortality from Bulbar Poliomyelitis	
Thomas C. Galloway, M.D., Evanston, Ill.,	
and Martin H. Seifert, M.D., Wilmette, Ill.....	341
Lung, Primary Cancer of the	
Thomas J. Kinsella, M.D., Minneapolis, Minn.....	37
Lymph Node Biopsy.....	25

M

Malaria in Korean Veterans	
James E. Kelsey, M.D., and	
Donald E. Derauf, M.D., Des Moines.....	423
Management and Diagnosis of Chronic Peripheral	
Arterial Insufficiency	
Harold N. Neu, M.D., and	
William J. Reedy, M.D., Omaha, Nebr.....	413
Management of "Epilepsy," Neurosurgical	
Measures in the	
Russell Meyers, M.D., Iowa City.....	128
Management of Lacrimal Duct Obstruction	
Carl A. Noe, M.D., Cedar Rapids.....	86
Management of Perforated Peptic Ulcer.....	57
Marriage Announcements.....	166, 520
Maternity Benefits Under Blue Cross-Blue Shield	
Are Liberalized.....	518
Medical Care of Children With Paroxysmal Convulsive	
Disorders	
John C. MacQueen, M.D., Iowa City.....	111
Medical Culture.....	197
Medical Education in Time of National Emergency	
Stanley W. Olson, M.D., Chicago, Ill.....	185
Medical Licenses.....	135, 238, 369, 465
Medical Role in Civilian Defense Meeting.....	166
Medical School Needs.....	363
Medical Service and Public Relations, News Notes	
From Committee on.....	28, 61, 100, 158, 199, 370, 407, 511
Members of the Iowa State Medical Society	
The Executive Committee, College of Medicine.....	109
Membership Roster of the Iowa State Medical Society.....	323
Mercy Hospital Clinicopathologic Conference.....	261
Medical Stenography and Terminology.....	439
Metabolic and Nutritional Studies of the Adolescent	
Joseph A. Johnston, M.D., Detroit, Mich.....	79
Methodist Hospital, Clinicopathologic Conference.....	396
Minutes of the House of Delegates of the AMA.....	367
Minutes of Meetings of State Society Officers and	
Committees.....	509
Misleading Statement by AAPS.....	269
Morbidity Report.....	266, 407
Mr. Ewing Again.....	364

N

National Conference on Medical Service.....	63
National Emergency, Medical Education in Time of	
Stanley W. Olson, M.D., Chicago, Ill.....	185
Neurological Basis for Seizures, A Discussion of	
Walter R. Ingram, M.D., Iowa City.....	114
Neurosurgical Measures in the Management of	
"Epilepsy"	
Russell Meyers, M.D., Iowa City.....	128
New Officers of the Grievance Committee.....	266
News Notes from the Committee on Medical Service	
and Public Relations.....	28, 61, 100, 158, 199, 370, 407, 511
North Central Conference.....	435, 506
Nutritional and Metabolic Studies in the Adolescent	
Joseph A. Johnston, M.D., Detroit, Mich.....	79

O

Obituaries—	
Amdor, William Franklin.....	340
Arent, Asaph A.....	108
Baumeister, Charles F.....	340
Bickley, G. G.....	340
Bos, Cornelius Nanko.....	36
Bossingham, Ottmer Nathaniel.....	379
Bowman, Fred Arnold.....	243
Boyd, Frank Elmer.....	70
Chadbourne, Theodore Lincoln.....	520
Chapman, Frederick Joseph.....	478
Cleaves, Prentiss Bowden.....	379
Conaway, Aaron Clyde.....	108
Cook, Clarence Percy.....	36
Cronk, Charles Herbert.....	412
Cruzen, John Lewis.....	478
Donlan, Eugene V.....	380
Dulin, John Albert.....	205
Ebersole, Francis Fisher.....	412
Eversmyer, Benjamin Ernest.....	36
Fagen, Rodney Pierce.....	478
Findley, William John K.....	70
Ganoe, James Orval.....	36
Gilfillan, George William.....	205
Gilfillan, Homer J., Sr.....	380
Griffin, Sarah M. F.....	166
Hanson, Charles Lawrence.....	446
Harp, John F.....	36
Hersch, Thomas Franklin.....	166
Houston, Bush.....	243

Kerr, Johnson Harper.....	478
Krause, Charles S.....	108
Kriebs, Frank J.....	244
Lampe, Elmer Lewis.....	478
Lee, Gisle Martin.....	380
Mac Naughton, Luther Donald.....	340
McCarl, J. Jay.....	36
McCrea, Eppie S.....	244
McLean, Ray A.....	206
Meyers, Henry Albert.....	70
Morgan, Earl Edward.....	36
Morgan, Fred B.....	36
Nourse, Leslie M.....	446
Plimpton, Robert P.....	206
Powell, Velura Elma.....	70
Pringle, Jesse Alva.....	380
Scanlan, Maurice.....	206
Schenk, Erwin.....	520
Schadt, Frederick Conrad.....	70
Sigworth, Fred Byers.....	446
Sugg, Herbert R.....	520
Tapper, George W.....	340
Waddell, Jesse Clyde.....	206
Wakeman, Allie Hoyt.....	108
Warren, Elbert Taylor.....	478
Winnett, Edwin Bason.....	108
Worley, Charles L.....	206
Obstetrics, Red Lights in	
Samuel A. Cosgrove, M.D., Jersey City, N. J.....	1
Officers and Committees, Iowa State Medical Society,	
1950-1951.....	207
Official Issue.....	267
Orthoptics	
Harold O. Gardner, M.D., Waterloo.....	491
Osteoporosis, A Review	
Paul W. Berney, M.D., Cedar Rapids.....	182
Omaha-Mid West Clinical Society Meeting.....	431
Otolaryngology, Respiratory Difficulties As Related to	
in the Newborn	
Ralph C. Carpenter, M.D., Marshalltown.....	353
Our Grievance Committee Is Functioning.....	97
Our Responsibility to the Fifty-Fourth General Assembly	
57	

P

Paroxysmal Convulsive Disorders, Medical Care of	
Children with	
John C. MacQueen, M.D., Iowa City.....	111
Perforated Peptic Ulcer, Management of.....	57
Peripheral Arterial Insufficiency, Diagnosis and	
Management of	
Harold N. Neu, M.D., and	
William J. Reedy, M.D., Omaha, Nebr.....	413
Peritoneoscopy	
Philip G. Keil, M.D., and	
Sylvanus N. Landis, M.D., Des Moines.....	48
Pharmacology of Anti-epileptic Drugs, A Brief Survey of	
Fred W. Schueler and Robert A. Featherstone,	
Iowa City.....	125
Physicians' Art Show.....	233
Planned Parenthood Clinic.....	238
Polk County Medical Society Centennial.....	437
Poliomyelitis, Bulbar, Lowering Mortality from	
Thomas C. Galloway, M.D., Evanston, Ill., and	
Martin H. Seifert, M.D., Wilmette, Ill.....	341
Poliomyelitis, Electrocardiographic Changes in Acute	
John E. Gustafson, M.D., and	
Harold Margulies, M.D., Des Moines.....	349
Poliomyelitis in 1951.....	401
Post Episiotomy Fistula in Ano	
James F. Bishop, M.D., Davenport.....	6
Present Status of Psychiatry in Iowa	
Wilbur R. Miller, M.D., Iowa City.....	392
President's Address	
Thomas F. Thornton, M.D., Waterloo.....	169
President-Elect's Address	
Donald C. Konzett, M.D., Dubuque.....	169
President's Page.....	27, 60, 99, 157, 198, 234, 270, 366, 436, 468
Primary Cancer of the Lung	
Thomas J. Kinsella, M.D., Minneapolis, Minn.....	37
Physiology of the Conjunctival Sac	
Abbott M. Dean, M.D., Council Bluffs.....	459
Problems in the Management of Diabetes Mellitus	
T. Lyle Carr, M.D., Iowa City.....	388
Problems of Pneumonia.....	197
Program, One Hundredth Meeting, Iowa State Medical	
Society.....	71
Program, Twenty-second Annual Meeting,	
Woman's Auxiliary.....	101
Progress Report on Nurses' Survey.....	98
Protect Blue Cross and Blue Shield.....	365
Psychiatry in Iowa, Present Status of	
Wilbur R. Miller, M.D., Iowa City.....	392
Public Law No. 791.....	25
Puerperal Care, Shortcomings in	
Norman F. Miller, M.D., Ann Arbor, Mich.....	245
Pulmonary Conus, Stenosis of, Without Associated	
Defects; A Case Report	
Ernest O. Theilen, M.D., and	
Lewis E. January, M.D., Iowa City.....	88

R

Recent Actions of the Council.....	155
Red Lights in Obstetrics	
Samuel A. Cosgrove, M.D., Jersey City, N. J.....	1
Reimplantation of Teeth.....	268
Required Post-Graduate Work of Periodic	
Re-examination	57
Respiratory Difficulties in the Newborn as Related to	
Otolaryngology	
Ralph C. Carpenter, M.D., Marshalltown.....	353
Review of Fifty Operated Cases of Protruded or	
Ruptured Intervertebral Discs in the Lumbar Area	
Henry G. Decker, M.D., and	
James E. Brennan, M.D., Des Moines.....	215
Rheumatic Diseases, Use of Cortisone in	
L. Emmerson Ward, M.D., Rochester, Minn.....	447
Roster of Iowa Physicians	
in Service.....	32, 66, 108, 166, 206, 244, 380, 412, 445

S

"Second Look".....	196
Seizures, Discussion of the Neurological Basis for	
Walter R. Ingraham, M.D., Iowa City.....	114
Serious Ankle Fractures	
Robert M. Wray, M.D., Cedar Rapids.....	383
Severe Injuries to the Hand	
Walter C. Graham, M.D., Santa Barbara, Calif.....	381
Shortcomings in Puerperal Care	
Norman F. Miller, M.D., Ann Arbor, Mich.....	245
Sioux City Hotel Reservations.....	59
Skin Sensitivity to Histoplasmin in Iowa	
Randall S. Derifield, M.D., Saginaw, Mich., and	
Richard L. Cole, M.D., Grand Junction, Colo.....	16
Small Bowel Obstruction	
Bernard C. Barnes, M.D., Des Moines.....	43
Socialized Medicine, Cites Dangers of	
Most Rev. Karl J. Alter, Archbishop, Cincinnati, Ohio	431
Society Proceedings—	
Benton	107
Black Hawk.....	35, 107, 165, 205, 339, 379, 477, 519
Boone	107
Buchanan	243, 339
Butler	35, 69
Carroll	69
Cass	69
Cerro Gordo.....	35, 69, 107, 165, 243, 519
Cherokee	69
Chickasaw	69
Clayton	243, 339
Clinton	69, 243, 339
Des Moines.....	165
Dubuque	69, 107, 477
Fayette	243
Greene	35, 519
Grundy	69
Harrison	69
Humboldt	243
Iowa Academy of Ophthalmology and Otolaryngology	519
Iowa Speech and Hearing Association.....	519
Iowa Urological Society.....	205
Jackson	107
Jasper	69
Johnson	35, 69, 107, 165, 205, 243, 339, 477
Lee	35, 69
Linn	107, 339, 519
Lyon	107
Mahaska	477
Marion	35, 477
Marshall	35
Pocahontas	69
Page	477, 519
Polk	35, 70, 107, 165, 205, 477
Pottawattamie	70, 339
Sac	165
Scott.....	70, 519
Shelby	165, 205
Southern Iowa Medical Society.....	205, 411
Union	107
Upper Des Moines Valley.....	411
Wapello	205
Washington.....	35, 70, 243, 339, 379, 477, 519
Webster	477
Winneshiek	70
Woodbury.....	107, 165, 205, 339, 477, 519
Worth	165
Wright	35
Sioux Valley Medical Association.....	165, 339
Some Applications and Limiting Conditions of Electro-	
encephalography in the Evaluation of Epilepsy	
John R. Knott, M.D., Iowa City.....	120
Some Observations of the Management of	
Patients With Stroke	
John T. Bakody, M.D., Des Moines.....	419
Speaker's Bureau	
Radio Schedule.....	61, 158, 199, 348, 407, 439, 479, 495
State Department of	
Health.....	31, 64, 103, 161, 201, 239, 334, 374, 405, 440, 472, 515
Status of Tax Exempt Retirement Plan Bills.....	402

Stenosis, Hypertrophic Pyloric; a Case Report	
John W. Dulin, M.D., Iowa City, and	
Albert E. Ady, M.D., West Liberty.....	188
Stenosis of the Pulmonary Conus Without Associated	
Defects: A Case Report	
Ernest O. Theilen, M.D., and	
Lewis E. January, M.D., Iowa City.....	88
Sterilizations Approved by Iowa's State Board	
of Eugenics	
Clarence J. Gamble, M.D., Milton, Mass.....	218
Sudden Cardiac Arrest.....	410
SUI Conference on the Treatment of Burns.....	166
Surgical Lesions of the Chest in Children	
Johann L. Ehrenhaft, M.D., Iowa City.....	136

T

Technical Exhibits, Sioux City Meeting.....	156
Tests, Use and Misuse of Hepatic Function	
Murray Franklin, M.D., Iowa City.....	416
Toxoplasmosis, Incidence among Pregnant Women in Iowa	
Virginia M. Stuermer, M.D., Robert J. Stein M.D., and	
John H. Randall, M.D., Iowa City, Iowa.....	248
Tracheotomy	
Byron M. Merkel, M.D., Des Moines.....	346
Transactions of the House of Delegates, 1951 Session....	271
Traumatic Abdomen	
J. Philip Cogley, M.D., Council Bluffs, Iowa.....	451

U

Ulcer, Duodenal, Diagnosis and Surgical Treatment	
of Posterior Wall of	
Howard I. Down, M.D., Sioux City.....	488
University of Iowa Issue.....	153
Use of Cortisone in Rheumatic Diseases	
L. Emmerson Ward, M.D., Rochester, Minn.....	477
Use of Isotopes.....	365
Use and Misuse of Hepatic Function Tests	
Murray Franklin, M.D., Iowa City.....	416
Upper Extremity, Cornpicker Accidents of the	
Carroll O. Adams, M.D., Mason City.....	454

V

Vocational Rehabilitation.....	401
--------------------------------	-----

W

What Does the Training of Additional Medical Students	
Entail?	96
What Should Your Journal Mean to You?.....	505
Wills for Physicians	
Hon. William F. Waugh, Chicago, Ill.....	50
Women's Auxiliary	
News.....	30, 62, 102, 159, 200, 235, 332, 371, 403, 438, 469, 512
Women's Auxiliary, Program, Twenty-second Meeting....	101

X—Y—Z

You and Your AMA	364
1951 Ahead.....	23
1951 Plastic Surgery Awards.....	233

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September 25-October 22

Medical licenses were issued to the following during the period of September 25 to October 22: John Wilbur Barloon, Santa Monica, Calif.; Mildred Mae Benjegerdes, Oklahoma City, Okla.; Julius Erwin Cook, Iowa City; Merton Ardell Johnson, Nevada; George Francis Koptik, Garwin; John Cecil Lyons, Davenport; George John McMillan, Fort Madison; Richard Ervin Munns, Alden; Robert Charles Payton, North Liberty; Benny Pinsky, Los Angeles, Calif.; Donald Stevenson Reading, Iowa City; Charles Ray Scholl, Jr., Iowa City; William Daniel Trumpe, Iowa City; William Rice Updegraff, Des Moines; Russell Jean Van Wetzlinga, Davenport; William George Wilt, Jr., Iowa City and David Glenn Whitney, Iowa City.

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